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Mandal Commission Report on Backward Classes: Should it be Revived or Revised ?

Teaching of Economics

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EDITORIAL - SOME HIGHLIGHTS

I. General Economic Scene

State

State of Tamil Nadu Economy

The Governor's address to the Assembly in January provided a brief outline of the state of the Tamil Nadu Economy. Due to the satisfactory nature of the South West Monsoon as a whole and in most districts, a peak production of 58.5 lakh tonnes of rice is expected in the current year. The North East monsoon as reported in the earlier issue of the Journal was deficient by more than 20 per cent in 8 districts but the December / January rains improved crop prospects. Pulses production is anticipated at 5.2 lakh tonnes, millets production at 13.88 lakh tonnes, cotton output at 5.2 lakh bales and sugarcane at 24.20 lakh tonnes. Industrial production is picking up as shown in the increase in letters of intent and the sharp rise in loans application to TIIC and SIPCOT. Capital subsidy and interest free sales tax deferral for setting up industries have been made available in 105 backward taluks and in all growth centres. In addition special capital subsidies are also available for 10 specific selected industrial group. The granite industry which has important effects on employment and exports is responding well to the new policy. For the sugar industry, letters of intent for 5 new cooperative sugar mills have been obtained. 8 new projects have been approved in the joint sector under TIDCO with a tolal investment of Rs. 290 crores, as are the 5 projects being taken up by ELCOT with an investment of Rs. 45 crores. In addition to SIPCOT's current 7 industrial centres where Rs. 500 crores have been invested by industries, 3 new growth centres are being developed at a cost of Rs. 30 crores for each centre at Mayiladuthurai-Poompuhar, Erode-Perundurai and Gangai-Konda Mannur. The public distribution system is under strain because the union allocation of sugar and palmolein has been sharply reduced. Rice distribution has improved through the union government's increased allotment of 50,000

tonnes in December and the increased monthly allotment of 60,000 tonnes in addition to the open market purchase of 3 lakh tonnes of rice, which resulted in the distribution of 15 lakh tonnes of rice in 1989 through PDS compared to 13 lakh tonnes in 1988. The Union has increased the issue price of rice which has not been implemented in this state, where the procurement price of paddy has been increased by Rs. 25 per quintal plus an incentive bonus of Rs. 35 a quintal. To improve the status of women, 30 per cent of jobs in government departments, public sector units and local bodies and educational institutions have been reserved for women, in addition to increased scholarships for girls and help for marriage of poor women. Action has been taken with AP government to complete the Telugu Ganga project which will bring 12 tmc feet of water to Madras by 1992-1993 for which the government is paying Rs. 60 crores. A request has been addressed to the Union Government to refer Cauvery dispute to a tribunal. The State Planning Commission has formulated the Eighth Plan and is awaiting a parallel decision by the Union Eighth Plan to finalise the state plan. This review naturally does not refer to the problematic areas faced by the state in the way of inflation, unemployment and increase in poverty which involve larger issues and will be discussed when the Tamil Nadu Economic Appraisal 1989-90 is available.

State Annual Plan 1990-91

On the basis of the recommendation of the State Planning Commission, the states' Annual Plan for 1990-91 has been published. The plan size for the year is at a little above the current year level of Rs. 1361 crores at Rs. 1450 crores which involves ARM of Rs. 250 crores. This modest level (an increase of 6.6 per cent) is also along lines of the Union Commission's thinking. Even this was possible by transferring some schemes from plan to non plan, resulting in lower provision for Education (transfer of Rs. 33.43 crores), social welfare and nutrition (transfer of Rs. 80.5 crores) — but the total provision (plan and non plan) and activities will be higher. The outlay has been increased in some sectors, power (Rs. 415 crores), water supply (Rs. 180 crores), agriculture (Rs. 160.37 crores), and transport (Rs. 147.30 crores). In these sectors, the Planning Commission has included a few new schemes. In other areas the previous year levels to finance the continuing schemes are provided for.

Supplementary Demands

The government presented in January to the Assembly the first supplementary estimate for 1989-90 for Rs. 582.87 crores which includes Rs. 215.86 crores in the Reserve Account, Rs. 48.96 crores for drought relief, Rs. 1.59 crores for the agricultural college at Trichur (in memory of Anbil Dharmalingam), Rs. 9.9 crores for supplying eggs under noon meal scheme, Rs. 3.17 crores for free footwear for women and children, and Rs. 51.65 lakhs for starting 95 high schools and higher secondary schools. The estimates were approved.

Climate and Prices

In January there was heavy rains for 7-10 days because of low pressure in the bay during the early days (first week) of January. As a result there was heavy rains and even flash floods in many districts in the state. On January 6, Vedaranyam recorded 9 cm,

Paramakudi 4 cm, Adiramapattinam, Karaikal, Mayiladuthurai 3 cm each, Mannargudi, Nagapattinam and Tuticorin 2 cm each. On January 7 Usilampatti and Kodaikanal received 13 cm, Karaikudi 12 cm, Tindivanam 11 cm, Madurai and Virdhunagar 10 cm each, Dindigul and Pudukottai, Paramakudi, Vandavasi 8 cm each and Vedaranyam, Arupukottai and Milakottai 7 cm each. On January 9 Kumudar was cut off by floods as was Punnakaral. Thousands were rendered homeless in Ahmednagar, Ayyanar colony and Fatima Nagar in Virudunagar. While in some areas of Ramanathapuram district crops have been damaged by floods and the standing paddy crop and the maize harvest in the Parambikulam Aliyar project have been affected, the rains have helped the crops in Thanjavur delta where the crop on 4 lakh acres needed 20 tmc ft of water, which they could not get from Mettur and for which the rains were timely. The rains have also helped Mettur — the inflow by 6500 cusecs and the outflow cut off to conserve water. But towards the end of January Mettur storage dwindled to 34 4 ft on 31 January placing the delta farmers in a quandary because they need 15 tmc water to save the 4 lakh acres samba crop. As of now, the Tamil Nadu appeal to Karanataka government for the release of 30 tmc water reduced to 10-15 tmc ft has been turned down by the Karnataka government because that state needed 80 tmc ft of water for its farmers and had only 58 tmc ft. The rains in January benefitted Madras city and its reservoirs to a limited extent. The North East monsoon was deficient in percentage terms in Chengai Anna (-5), Chidambaram (-14), Coimbatore (-20), Dindigul Quaid-e-Millet (-13), Kanyakumari (-30), Madras (-2), Nilgiris (-39) Periyar (-17), Ramanathapuram (-4), Salem (-23), Thanjavur (-15), Tiruchi (-38) and Tirunelveli (-28). Metro water faces a serius problem in Madras city. On January 1, 1990 the combined storage in the 3 reservoirs stood at 2186 mc ft compared to 2555 mc ft on January 1, 1989. Even the alternate day Supply of 60 million gallons will not last till the next North East monsoons, particularly from September when the gravitational flow from Red Hills will taper off. A Committee has been appointed to examine the feasibility of making sea water potable so that it could be used by industries, lodges and hotels to release the water now being supplied to them for domestic consumers. On prices in the state, CSO's monthly abstract of statistics for October 1989 reports for August a rise by 16 points to 874 in the index number of consumer prices for Industrial workers, a small increase of 3 points to 708 in July in the index number of consumer prices for agricultural workers, and relative stagnancy in the revised consumer price index for urban non manual employees for August rising by 1 point to 152 for Madras, by 1 point to 146 for Coimbatore, by 2 points to 149 for Madurai, by 1 point to 144 for Salem, and 1 point to 148 for Tiruchirapalli.

Power

The power situation in the state in January was normal. From January 12, the 10 per cent power cut on 1200 HT industries was abolished until March 31, 1990. The demand cut of 20 per cent, however, stays to manage the peak demand and the power supply position will be reviewed. CEI has suggested the reservation of a certain percentage

of hydel energy as the peaking load, which will also meet the problem of the inadequate water level in hydel reservoirs. To meet the resource shortage, TNEB has invited the views of consumers on a hike in power tariff. The hike is now inescapable, if the Board is to function without draining the state resources. This goes along with other Board economy suggestions such as restoring holidays of industries, levy of surcharge on energy consumers during peak load periods, and need for co-generation in process industries. It has also drawn up proposals for cutting on transmission and distribution losses by Rs. 525 crores, after providing for the cast off transformers etc. at a number of sub stations. The failure of the ports to supply coal to coastal thermal plants has led the Board to request the railways to move coal, which may not be a solution to the problem as the Railways will want to increase their VIII Plan provisions to meet this demand. The increasing cost of generation in the state due to rise in the price of coal and transportation costs and some managerial ineffectiveness which the State Planning Commission has pointed out, which prevents the uninterrupted supply of power is one of the obstacles to the new industrial programme taking off.

The power situation in the country in January continued as the previous month, with the usual shortage not showing up. But the Eastern region reports a severe power shortage, particularly in Bihar and Orissa. It was 3331 million units or 11.6 per cent in 1988-89 and continued last year. NTPC reports that its additional capacity generation will be 11.150 MW and 16,000 transmission lines in the VIII Plan. NHPC states that it will set up 5 plants in the northern and north eastern region in the period with an investment of Rs. 9000 crores. The underground hydel project in HP (8000 feet on the banks of Kofness river, and 3 units of 40 MW each) was launched in January. Kerala reports that it is considering power generation by private agencies as a remedy to its power shortage. The proposal commends the interest of both the government (Ms. K R Gouri, Industries minister) and the opposition. The ministry of power states that for the VIII Plan capacity addition will be 38,000 MW and increased gas based projects, setting up coastal thermal plants to avoid transport bottlenecks regulating demand through better load management, energy conservation and improve T & D system.

Housing

Under the global housing development programme, Rs. 13 crores are to be spent in the VIII Five Year Plan with aid of the World Bank. Till now 50,000 tenements have been constructed at a cost of Rs. 48 crores benefiting 1 lakh families. Under the Tamil Nadu development programme it is proposed to cover 95,000 slum families spread over 10 major urban agglomerations, in the state. This is in addition to the environmental urban improvement of slums in small and medium towns benefiting 3 lakh families and costing Rs. 10 crores. The housing shortage in the state at the beginning of the VII Plan was estimated at 10 lakh units, against which the falling investment in housing from 25 per cent in I Plan to 4 per cent in VII Plan is a cause for concern. The government also states that it is considering introduction of a hire purchase scheme for the slum clearance board tenements in the hope that it will prevent the sub letting of the

tenements (which a recent study places at 13 per cent).

Transportation

The Ministry of Power states that for the VIII Plan capacity addition will be 38,000 MW and increased emphasis is on gas based projects, setting up overhead thermal plants to avoid transport bottlenecks regularly through better load management, energy conservation and better T & D system. The government reports that it has set up a 5 member expert committee to examine the working of the state owned transport undertakings and streamline the audit system, the operations, the organisation set up and the service conditions of the employees. This will be the second review of the state transport undertaking, the first being in 1976. The present committee is headed by Mr. Thillanayagam. Southern Railway report that it has loaded 12.58 million tonnes of originating, revenue earning traffic surpassing the target of 12.20 million tonnes for the first nine months of 1989-90 and ensuring that the year's target of 17 million tonnes will be achieved. A second line to the Madras port is being commissioned to increase wagons loading from 200 to 250 carrying 2.97 million tonnes. Petroleum products of 3.4 million tonnes were transported, followed by paddy loading at 200-800 wagon a day. The good record of the Southern Railway is a reflection of the sound wagon management and turnover. The Southern Railway reports that the electrification of Jolarpet - Erode is in progress but its energisation may take some time.

Banking in the state

The Banking section has recorded rapid growth in the VI & VII Plans in Tamil Nadu. During this period the number of branches was increased from 2945 in 1980 to 4150 at March 1989. Deposits increased from Rs. 2555.10 crores in 1980 to Rs. 9247.97 crores in March 1989. Aggregate credit increases from Rs. 2253.06 crores to Rs. 8736.49 crores in the period which was a 288 per cent growth compared to the deposit growth of 262 per cent. As a further consequence, the credit deposit ratio has risen from 88.2 per cent to 94.5 per cent in the period. Priority sector lending increased from Rs. 795.35 crores to Rs. 3643.45 crores during the 10 years — a growth of 358 per cent, from 35.3 per cent of total credit to 41.2 per cent. They are still behind agricultural credit at 16.8 per cent against the norms of 17 per cent and the DRI advances are still 0.8 per cent of total advances against the 1 per cent norm. This panorama shows an encouraging overall banking growth with the need to develop agricultural credit and even more so the need to deploy credit in rural and cottage industries, in village artisans, craftsmen and unskilled labourers who can contribute to better resource generation, if they are given adequate credit and price support.

National

Plan

January was a month when many ideas on the Plan were thrown up by the members of the commission who have much more freedom now than under the previous year's, from ministers, from scholars and from groups. One main area under discussion arising from the recommendation of a task force of the Planning Commission under Dr. Lakdawalla is that since as a result of successive plans hunger is no longer of the magnitude that it was earlier, the Plan can concentrate on improvement

in standard of living and not on removal of hunger. If this means that poverty alleviation should go beyond removal of hunger and seek to provide wage goods — which means a switch over to the wage goods model it should be welcomed. On the other hand, members of the Planning Commission are equally right in pointing out that hunger has not ceased to be a problem, whose removal should go along with the provision of wage goods. There is no either or here as in other such issues. Both removal of hunger and increased provision of wage goods are needed. Another issue under wide ranging discussion is the question of cutting back what are called centrally sponsored schemes which have gone beyond Rs. 3000 crores and transfer their responsibility to the states on the basis of the schemes drawn up by districts and union Panchayat councils. The ministries are opposed to this because they feel that Rural Development, Anti poverty, Education and Family Planning are not the priorities of the states and that they may divert funds devolved on them to their priorities of power, irrigation and industry. On this, there is no doubt that the centrally sponsored projects are taking over the responsibility or functions of the states established by the constitution and need to turn around. A Planning Commission study on the government's decision to allocate 50 per cent of public sector outlay on agriculture states that to achieve this the share of state plans has to be raised from the current 59 per cent to 65 per cent and the Union sector from 32 per cent to 35 per cent. This should be possible because the states are largely concerned with the components of rural development, namely, agriculture, irrigation and allied activities, health, education and rural development, while the Union Plan concentrates on heavy industries, energy, railways, civil aviation and scientific research and development. The study shows that in VII Plan Rs. 99,521.25 crores out of a total public sector outlay of Rs. 222,169,25 crores for rural development means only 44.8 per cent - was spent on it, which must now be raised to 50 per cent. In the Union sector of Rs. 180,000 crores, Rs. 80,665.62 crores was for rural development which was also 44.82 per cent. This broke down into 21.7 per cent for agriculture and allied activities, rural development, special area programmes, irrigation and flood control, 9.12 for energy, 2.2 per cent for mines and minerals, 1 per cent for transport, 0.24 per cent for communications, 0.35 per cent for science and technology, 10.10 per cent for social services (education, health etc) and 0.02 per cent for others. The accounting is based on the estimate that agriculture, rural development, special areas programme, irrigation and flood control is fully rural, 30 per cent of power expenditures is rural, 38 per cent of petroleum sector in rural, 100 per cent of rural roads, inland water transport, village and small industries (except power looms and small scale industries) 40 per cent of road transport, 3 per cent of telecommunications, 50 per cent of the environment and ecology, 20 per cent of other S & T, 50 per cent of education, 60 per cent of health, 90 per cent of housing for ST & SCs, 70 per cent for women's welfare and 20 per cent on labour welfare and 80 per cent of public distribution. Another issue being discussed is the future of mega projects, particularly those which have not taken off the ground, both because of the resource and capital crunch and because they are not employment intensive. Further, there is the

discussion of shifting the Eighth Plan approach from the growth rate to employment generation, which leads to one view that the growth rate should not be down played but set at a reduced 3.5 per cent. This is not necessary : the growth rate should be the result of the Plan and its concentration on employment generation. This also is involved in the emphasis on agriculture and the proposal to increase its funds by 10 per cent over what is proposed in the previous commission's draft VIII Plan, so that 50 per cent of plan funds are allocated to rural and agricultural development. The 1990-91 annual Plan on which work is underway, is starting with a review of the plan ot states and union ministries. with the resource crunch facing the economy, the 1990-91 Plan is not likely to increase above 5 per cent of that of the 1989-90 Plan. There is also discussion of the structure of the Planning Commission and placing it on a statutory basis. Various proposals are being made by the Minister of agriculture on agricultural plan investment, and that for railways and other sectors which are all under review at present.

Prices

Inflation for December was —0.8 per cent, the whole sale price index standing at 165.9 for the week ending December 30. While inflation on that data compared to the last week in December 19.5, on a point to point basis, was 7.5 per cent for the quarter October to December inflation was lower at December 30 being 7.51 per cent against October 30 at 8.33 per cent. There was a down trend in the prices of food articles, ragi, rice, jowar, maize, pulses, vegetables, milk due to the good weather. For the quarter, prices of 60 commodities declined which more than offset the rise in about 120 commodities. The index for the food articles sub group declined during the 13 weeks from 188.4 to 173.4. The index for non food articles zig zagged within a narrow range. The index for chemicals, minerals, basic metals, machinery and equipment rose during the period. RBI has notified its credit control on wheat, cotton and sugar. Government informed Parliament that to contain inflation, imbalances in the demand and supply of essential commodities are being corrected, excess liquidity in the economy is being mopped up and existing laws against hoarding and profiteering are being strictly enforced. In particular growth in money supply and in public borrowing are to be controlled. In regard to agricultural prices, the government announced a) the formation of a 7 member council with Dr. Hanumantha Rao at the head to advice the government on agricultural prices and related issues and b) the case for and against a uniform price for the whole country against regional prices.

Stock Exchange, Bank and Budget

The January meeting of the Presidents of Stock Exchange after reviewing their functioning and needs recommended i) automatic listing of shares arising out of conversion, 2) power to fine companies for breach of the provisions in the listing agreement, 3) liberalisation of existing provision for corporate membership of stock brokers, 4) the submission to government of the guidelines on good and bad delivery of documents, 5) use by the products of the finalised guidelines for settling disputes between members of 2 stock exchanges, 6) multiple

membership amongst stock exchanges and liberalising existing provisions for membership, 7) revaluing activities by the financial institutions which would spread the equity cult, 8) changes in the terms of conversion of convertible debentures and the ratio of issue of rights and bonus shares as a means of increasing marketable lots and decreasing odd lots and 9) the formation of a high power committee by government to examine the proposals for a certificateless society. In order to meet its growing requirement of resources from the capital market, ICICI has decided to make its equity more attractive and so offload them on the market. As guideline for the issue of commercial paper, RBI requires tangible net worth of the issuing company of not less than Rs. 10 crores, a fund based working capital limit of Rs. 2.5 crores a week and a minimum current ratio of 1.33:1 besides being classified under health code by the financing bank and a ratifying P, plus from CRISIL. The government announced in late January the reduction of the minimum period between a previous sanction and a fresh application for loan issues from 24 to 12 members to enable companies to make more frequent issues. The government called a meeting of the heads of financial institutions to discuss the terms and conditions of the autonomy to be extended to them. This should be approached carefully in view of the way in which the term lending institutions have freely favoured certain enterprises which were close to the past government. A substantial increase in interest payments which have increased from 11.6 per cent of total expenditure in 1980-81 to 19.2 per cent in the 1989-90 budget as a result of which interest payments have increased from 3.6 per cent to 10.8 per cent during the period, according to official sources. This is important because the government keeps emphasising that the growth target of the VII Plan has been achieved and even exceeded, without also calling attention to the worrisome fact that the pattern of financing that growth is vastly different from what was set forth in the VII Plan document, including serious discrepancies in the revenue deficit, market borrowing and budget deficit. The government reports that it is adjusting interest rates on NRI deposits so as to reduce the debt service burden. Interest on NRI's FCNR has been reduced from 10.5 to 8.75 per cent for one year deposits, from 9.5 per cent to 9.25 per cent for 3 year deposits. At the end of December the government announced that investors will be free to opt out of convertible debentures into equity. The Union government announced in January the fourth tranche of public borrowing for 1989-90 for Rs. 1600 crores to reach the target for the year of Rs. 7250.25 crores. There is speculation that it may be further raised to Rs. 7750 crores to meet the mounting deficit.

Economy

The new government set forth on January 1 its Action Plan for the economy: 1) Atleast 50 per cent of investible resources in agricultural and rural sectors of the economy to be ensured from the 1990-91 Annual Plan: 2) give farmers a remunerative price: i) an inflation formula in the support price to be introduced: ii) labour to be costed on basis of actual wages or minimum wages, whichever is higher; iii) managerial labour cost in the farming labour to be included: iv) these changes to be reviewed by an expert

committee to be appointed by the Ministry of Agriculture : 3) The right to work will be made a fundamental right and the necessary legislation to be introduced : 4) a comprehensive constitutional amendment on panchayati raj will be prepared and introduced during the budget session. 5) All land reform legislation will be included in the Ninth Schedule and land reforms will be on the agenda of the proposed inter state council : 6) a scheme for debt relief upto Rs. 10,000 for small, marginal and landless cultivators and artisans will be finalised during the budget session : 7) a long term fiscal policy will be presented during the budget session : 8) measures to curb ostentations and elitist consumption will be taken : 9) with a view to promote exports and plug loopholes in import and export rules : i) a new 3 year import-export policy will be announced in April 1990, ii) simplified preshipment documentator will be announced on March 1, 1990 iii) export, will encourage exports of items with high foreign exchange content : 10) Ministry of Defence will appoint a committee to realise the principle of 'one rank one pension' for ex-servicemen : ii) A national Security Council under the chairmanship of the Prime Minister will be set up by April 1990 : 12) a bill to set up an autonomous corporation for TV and radio will be open to public debate during the budget session : 13) An inter-state council will be set up after the forth coming election to the legislative assemblies of the states on the basis of the views of the states on its nature and duties : 14) to promote workers participation in management, a national seminar will be held in January 1990, further steps will be worked out in February and legislation on it introduced during the budget session : 15) a new industrial relation bill will be brought forward in the monsoon session of Parliament : 16) substantial expansion of the programme for the urban poor will be undertaken from April 1990 to include : i) provision of basic services and facilities in slums, particularly for women and children ; ii) an increased provision of providing night shelter to pavement dwellers : iii) a comprehensive national housing policy for different sections of society particularly for the poor ; and iv) liberation and rehabilitation of scavengers covering 500 towns annually : 17) a master plan for net work of godowns and warehouse for the country both in public and cooperative sectors by March 31, 1990 to insure farmers against distress sales : 18) a long term policy on licensing sugar mills will be announced by March 31, 1990 to decimate political favouratism and bureaucrats arbitrariness : 19) science and technology programmes will be reviewed to provide emphasis on rural needs, particularly poverty alleviation, water management and land use : 20) an environment policy and laws will be reviewed to protect tribal interests and protect the environment by April 1990. All ministries will develop precise and detailed action plans on these items and implement them. These are a valid inventory of what needs to be done both to stimulate the economy and meet the most urgent demands of its people. IMF predicts a decline in the country's growth rates this year following last year's high rate. CMIE in its 6 monthly review, January 1989, also forecasts a growth rate of 4 per cent for 1989-90. The government states that as part of point 19, the technology missions which will be continued will be reviewed

and reformulated. Not only is food availability essential for the poor, so are the other elements of the standard of living - such as infant mortality, life expectancy and education. A survey of two Rajasthan villages shows that the people want not only a rise in money incomes but also the availability of consumer durables of regular wax, shoes, transistors, increased bargaining power with the employer and non resort to the market to purchase one's cereals. The annual report of the commission for scheduled castes and tribes states that while huge investments in tribal welfare, which, increased from Rs. 1000 crore in the V Plan to Rs. 13000 crores in the VII Plan, has increased infrastructure in tribal areas in roads, buildings, electricity, drinking water and health facilities, it has not improved their quality of life and has not been able to check their exploitation, in land alienation, indebtedness, money lending and forest rights. A recent review of the parallel economy recalls that its manifestation in black income comprises : i) illegal incomes such as through smuggling, gambling etc, ii) tax evaded income, iii) incomes which have escaped inclusion in national income estimates. Estimates of black incomes start from that of Nicholar Kaldor in 1956 at Rs. 200-300 crores as tax evaded loss to the government (which was countered by the Central Board of Revenue as being only Rs. 20-30 crores which was also the view of the 1958-59 Direct Taxes Committee). The next estimate was by the Wanchoo Committee which paced it as Rs. 700 crores in 1961-62, Rs. 1600 crores in 1965-66, Rs. 1400 crores in 1988-89. The latest estimates by the National Institute of Public Finance and Policy which places it at Rs. 9958 to 11870 crores (15-18 per cent of GDP) in 1975-76, at Rs. 30,360 to Rs. 23,678 crores (15-18 per cent of GDP), and Rs. 31,584 to Rs. 36,786 crores (18-21 per cent of GDP) in 1983-84, of which tax evaded income is 69.95 to 73.51 per cent. All these estimates are however incomplete because they do not cover item (i) and (iii) referred to above. The Railways report that it has a huge backlog of 12,000 KM of track renewals which need to be cleared in the VIII Plan.

Industry

Industrial growth in the first 6 months (April-September) was 4.1 per cent, with manufactures at 2 per cent. But the pick up in October of 5.9 per cent of industrial growth, so that the April-October rate is 4.4 per cent. In January, ministers and scholars have set forth a new industrial policy with main emphasis on employment generation, particularly in the agricultural rural sectors. More jobs and more goods and services for the masses are to be the focus of India's industrial development. During the year, while some industries like fertilisers and cement were facing recessionary situation, most industries increased their production. The small scale sector complains of scarcity of pig iron, while CCI recorded a 11 per cent increase in production in 1988-89. During January, the Abid Hussain Committee on textiles came out with its report which recommends the appointment of an apex council with representatives of non officials from different parts of the industry to solve the industry's problems and recommend an appropriate textile policy. Due to the general election, the Public Investment Board has not met for 3 months resulting in the piling

up of 30 projects awaiting clearance. BHEL in its 25th annual report states that it will finance its capital schemes out of extra budgetary resources. The government has set up a 13 member committee to review communication policy, the communications commission and C-DOT. The first global super conductivity conference was organised in Bangalore in January and its result is to speed the commercialisation of super conductivity and further enrich and accelerate its multi-disciplinary research. The World Bank, in its usual stance, proposes an intermediate term policy package for the capital goods sector involving amending FERA and MRTP, ending all concessions to small scale sector, and discontinuing price preference policies favouring the public sector and reduce the effective rates of protection to domestic producers, — all with a view to provide clear and consistent incentives for economically efficient production, discourage inefficient new investments and encourage restructuring of non competitive units. The package is aimed at stimulating a more outward looking aspect of the industry along with better access to foreign technology sources. Apart from the World Bank getting into an area which it has no business to, the policy package advocated is not in line with the policy of the new government. The government has announced its decision to set up a new department of small scale and village industries in the Ministry Of Industry to promote rural development through ensuring that people in rural areas receive their share of industrialisation and its benefits. The government also announced the setting up of a committee headed by Bhanu Pratap Singh to examine and recommend steps needed to put farming on an equal footing with industry. The government announced its intention to review the country's growth centres.

Public Sector Enterprises

The Department of public enterprises reports that the output of 33 of its enterprises exceeded their November 1989 target by 10 per cent and for the period April-November 1989 had a cumulative turnover of Rs. 90.03 crores which was 101 per cent of the target, the outstanding performers being Bharat Wagons 102 per cent, Maruti 103 per cent, Richardson and Cruddas 101 per cent, Tungabadra steel 103 per cent, Bharat Opthalmic Glass 110 per cent and Hindustan Photo Films 123 per cent. The government states that it proposes to encourage the public sector to compete with the private sector in select areas like power as part of our broad industrial policy under which the phased manufacturing Programme (PMP) will be vigorously monitored in several sectors and the limit in plant and machinery by the small scale sector will be raised. This last should be done without further allowing large units to establish benami small scale units, which may be difficult. The government further states that the public sector units cannot be given the type of autonomy of the private sector units ; its major needs which call for action are a) inadequate resource generation, b) poor project management, c) high capital output ratio, d) over manning, e) high cost of production, f) lack of continuous technological upgradation and g) inadequate attention to R&D.

National Production Front

Steel

Reports from SAIL in January were of a mixed nature. On the positive side it

reports a good order book position, having booked 1.5 lakh tonne orders this year (April-December) against last year's 90,000 tonnes. The government states that it will start work on the new steel plants in Karnataka and Orissa in the VIII Plan. It says it plans to allocate Rs. 1000 crores each to the two plants at Vijayanagar and Daitari. For Vijayawada, Mittals have made application for collaborating with SAIL to set up the plant. On the negative side, input costs (the share of raw materials) continue to increase, steel production during April-October 1989 fell by 3.9 per cent, SAIL reports increasing its stakes in the Viseswerayya steel plant to 60 per cent, calling for a complete restructuring of the plant and the Vishakapatnam steel plant continues to be accident prone, experiencing a fire in its coal conveyor system and through some security lapse in the machinery led to the death of workers in the second week of January. It reports a likely shortfall in steel production in the year of 1 million tonnes, the actual production being 8.4 million tonnes of crude steel.

Crude

In 1989 there was a spurt in the production of crude oil (by 2 million tonnes reaching 31.07 million tonnes) and gas, upgradation of Krishna Godavari Cauvery and Assam Arakam basins, increased gas sales, a series of hydro carbon strikes and the rapid internationalisation of ONGC's operations. Given the fact that oil imports are estimated to increase by Rs. 1700 crores in 1990-91 to import 24.6 million tonnes and the continuous escalation in the price of crude from $14.38 per barrel in 1988 to $17.31 in 1989 and further $ 21 in Jaunary 1991, the perspective for indigenous production in the VIII Plan are encouraging and vitally necessary. The target for oil production is 51 million tonnes (a 50 per cent increase compared to the VII Plan increase of 17.2 per cent) and natural gas 80 million tonnes (which is a doubling compared to the VII Plan increase at 50 per cent). For the VII Plan, crude production at 157.38 million tonnes will be short of the target of 160.01 million because of Oil India's shortfall producing 12.87 million tonnes against the target of 15.50 million tonnes. Even so, the annual requirement of crude at the end of the VIII Plan is 75 million tonnes and so it is urgent that gas be used as much as possible to replace crude. In this connection the Iranian offer of a Trans Asian natural gas pipeline with a capacity of 100 million cubic metres a day can serve both Pakistan (30 million cubic metres) and India (70 million cubic metres) is very attractive, more so as the price will be less than 45 per cent of the selling price of that of the Gas Authority of India. On this, India and Pakistan will have to work together. Meanwhile India should increase its gas production from the Kutch area, Bombay High and Gujarat now, along with an effective pipe net work provided by the Government.

Coal

The Planning Commission's working group on coal and lignite has proposed an investment of Rs. 20,399 crores during the VII Plan for the development of coal and lignite. Rs. 13946 crores are for CIL, Rs. 2358 crores for Singereni and Rs. 3830 crores for Neyveli lignite. The group recommends further mechanisation for the mines and a small reduction of the work force from a projected 7,46,398

to 7,06,670. The coal production target for 1990-91 is being fixed at 221 million tonnes.

Non ferrous

The aluminium industry in a turn around has urged the government to stop the unwanted inflow of aluminium into the country. This will help improve the position of the domestic industry which is at present faced with a glut in the market. If this is so, then import of 50,000 tonnes of aluminium could have been stopped, saving Rs. 150 crores in foreign exchange.

Sugar, Fertilisers and Oilseeds

Sugar prices have been zig zagging during the last 2 months. rising sharply in December end and the beginning of January and falling sharply at the end of January (probably due to the increased release of free sales sugar for February of 5.25 lakh tonnes compared to 5 lakh tonnes for the longer months of January). The basic problem is the decline in 1988-89 production to 87.5 lakh tonnes from the previous year's 91.1 lakh tonnes and the expected 100 lakh tonnes for 1988-89. Notwithstanding 2.4 lakh tonnes imports, stocks have fallen to a very low 10 lakh tonnes while consumption is racing ahead. Various suggestions have been made to the government to increase production by ISMA centering around the statutory minimum price control of the movement of gur and increased incentives to start early crushing, the food departments proposal to decontrol sugar etc. The new long term sugar licensing policy is likely to remove the present ceiling on capacity of existing as well as new units. Under present policy, the capacity limit is 5000 tonnes. Various devices to increase production are needed but imports have got to be stopped and consumption by the well to do - five star hotels - has got also to be reduced by some form of rationing as well rise in prices. On fertilisers, the Union government is holding up proposals worth Rs. 1720 crores for increasing the existing capacity of various fertiliser units. This delay is not in the interest of the country and the industry, as it is sending up the cost of the projects, particularly the modernisation programme. Only one project is for doubling capacity. It is necessary for the government to take an early decision as the projects are needed and to avoid the loss which the cost escalation involves. The oil seeds scene is encouraging. In 1988-89 (November to October) a record 17.5 million tonnes were produced, a record surpassing the last peak production of 12.95 million tonne in 1984-85. This has enabled imports of edible oil to become 3.5 lakh tonnes, against the previous year 1987-88 import of 18.55 lakh tonnes, saving Rs. 800 crores in foreign exchange. ICAR points out that there are 40 new and hybrid varieties which have a 4 times yield potential over the current average, which means with an area of 20 million hectares under the crop an increase in output of 4 million tonnes in a season can be obtained, even if the new varieties are used on only 25 per cent (5 hectares) of the area. This is needed because the demand for edible oil is increasing at 3-4 lakh tonnes a year, so that oil seeds production will have to increase by 1 to 1.5 million tonnes annually. If imports are to be completely eliminated an annual production

of 20 million tonnes of oil seeds is needed. This also means that given population growth, the VIII Plan target should be set 25 million tonnes which is attainable with the fuller use of agricultural research.

Agricultural Production

The agricultural ministry estimates for 1989-90 that foodgrain production will be 174 million tonnes, which is 4 million tonnes more than last year, sugarcane at 210 million tonnes and cotton at 10.2 million bales — all due to the favourable weather. With the high level of agricultural production in 2 successive seasons, rice procurement will exceed pervious records and is estimated to reach 10 million tonnes. The government states that government agencies have procured 6.5 million tonnes till the first week of January as against 4.38 million tonnes at the corresponding time of the last year. Though rice production for the current year is expected to be the same as that of last year, at 71 million tonnes, the high procurement is due not only to the successive bumper crops, but to the early paddy arrival in surplus states of Punjab and Haryana, higher support prices and early availability of the grain in the open market. The working group on agricultural credit and cooperation has recommended continuing the comprehensive crop insurance scheme with Rs. 500 crores in VIII Plan, covering 800 lakh farmers and 1250 lakh hectares and giving the scheme statutory basis. The government also announced the setting up of a 7 member committee comprising farmers from different regions to advise the government on agricultural policy matters as well as more remunerative prices for their produce, relief from debt, provision of cheap and easy credit, land reform and improved access to water.

Foreign trade

The monthly release of the data on the balance of trade and its varying interpretation is an indication of the important and worrisome place which the trade balance and the balance of payments of the country occupy. One presentation is that of the government that the trade deficit has declined in both rupees and dollar terms for the period April-November. It has declined by 17.7 per cent (from Rs. 5505.51 crores in April - November 1988 to Rs. 4522.16 crores in April-November 1989 but by a higher 29.5 per cent in dollar terms. Exports during the period rose by 38 per cent at Rs. 16832.46 crores (18.1 per cent in dollar terms) and imports rose by 20.7 per cent from Rs. 17,706.21 crores to Rs. 21,364.52 crores (in dollar terms the rise was 3.3 per cent). Another persentation shows the widening of the trade gap in November 1989 by 50 per cent compared to November 1988 because of the sharp rise in imports by 36.8 per cent for November 1989, which makes the trade deficit for that month rise by 29.5 pet cent (Rs. 738.35 crores) compared to November 1. The increased deficit for November was a departure from the earlier 7 months, in each of which there was a narrowing of the trade deficit. In this connection the imports of capital goods play an important part. For 1988-89, it was Rs. 7000 crores (25 per cent of all imports) compared to the Rs. 35,000 crores in 1985-86. Capital goods imports doubled during the 3 year period and reflect large scale investment using these goods for products of consumers durable and replacing indigenous capital goods. On the balance of payments (BOP) the government reports that the BOP deficit which averaged 1.3 per cent during the VI Plan increased to more than 2 per cent

during the VII Plan, rising to 2.8 per cent for 1988-89. The higher level of the current account deficit and the pattern of financing this deficit which has changed from using World Bank, IMF, bilateral loans in the VI Plan to medium and long term commercial borrowing and NRI deposits has brought about a serious debt service ratio problem. The country's medium and long term debt which was Rs. 18,400 crores at the end of 1980-81 increased to Rs. 68,6311 crores at the end of 1988-89 to which if NRI deposits are added becomes Rs. 83,000 crores in March 1989. The reasons for the rise in the current account deficit as a percentage of GDP due to the mounting pressure on BOP involves a) the plateauing of indigenous oil production against the rising demand for POL, b) the launching of the new and more liberal import-export policy for 1985-88 c) the levelling off of workers' remittances from abroad and d) the steep rise in debt-service payments as a result of earlier borrowings from IMF, ECB and other diverse sources. In the BOP crisis, the outflow of remittances abroad needs particular examination. RBI data on the remittances for the year 1961-66 to 1980-87 show a) profit at a low level at Rs. 10.6 crores in 1986-87 (in 1985-86 it was Rs. 13.5 crores) due to the non encouragement of remittances of profits even foreign equity : b) dividends which tapers off because of FERA have increased to Rs. 85.50 crores in 1986-87 and with foreign investment increase will rise further : c) royalty which was Rs. 2.9 crores in 1965-66 are now Rs. 40.10 crores in 1986-87 due to the sharp rise in technology imports: d) it is payment for technical knowhow which has jumped from Rs. 6.99 crores in 1965-66 and Rs. 43.37 crores in 1979-81 to Rs. 358.40 crores in 1986-87 and interest payments which were nil in 1965-66 to 1968-69 and were Rs. 22.32 crores in 1980-81 have spurted to Rs. 318.90 crores in 1986-87 making total foreign remitance rise from Rs. 42.83 crores in 1965-66 to Rs. 813.50 crores in 1986-87. This analysis shows the need for restraint in technology imports and foreign equity investment and a drastic reduction in commercial borrowing alongside of some slow down of the sources of the outflow of dividents, royalties and technical fees. All this is on account of the private sector : the public sector adds to this : the Action Plan states that a new Import-Export policy will be announced in the budget session. Accordingly the validity of OGL has been curtailed to March 31, 1990 and a single window clearance is expected. The government announced in January CCS ranging from 5 to 22 per cent for 25 additional export items. On individual items, exports of cotton textiles are likely to pass the year's target of Rs. 1200 crores, having recorded 906.90 crores during the first 8 months (April-November). Engineering exports will attain the year's target of Rs. 2300 crores and is setting itself the VIII Plan target of Rs. 4750 crores. Leather exports are likely to reach a record of Rs. 2100 crores. Garment exports in 1988-89 increased at 60 per cent to Rs. 724.110 lakhs.

Loans and Aid

The World Bank is giving a loan of $375 million for the regional power system comprising Farakka Stage III, additional 400 km transmission lines from Madhyadral and for spares. West Germany has made a grant of Rs. 95 crores for social development and poverty alleviation projects. The European Community is making a grant of Rs. 76

crores for strengthening veterinary services and eradication of rindapest in the country. ICICI is negotiating another $50 million medium term commercial loan (while the ADB loan to it of $100 million still lies unused). In addition to ICICI, 3 public sector enterprises — BHEL, ONGC and NTPC have been authorised to enter the international capital market to raise foreign currency loans. The government has under consideration requiring borrowers in the corporate sector to generate adequate foreign exchange earnings to service their external debts, if they were raising resources abroad.

International

World Economy

The UN study on the world economy states that there will be a slow down in 1990, with the industrial market economies recording a rate under 3 per cent (compared to over 3 per cent in 1989) and modest growth in Latin America (against the slow growth in these years in 1989), a further moderate deceleration in South and East Asia, with their average remaining still high. In China, growth in 1990 will be the the reduced growth of 1989. The persistance of a large US payments deficit continues to be a danger to the stability of the world economy, so that continuing willingness of foreign savings to finance the US deficit is not assured. For a large number of developing countries, their ability to stay on the course of policy reform that they have embarked on and which is essential depends on the developments in the world economy and progress in resolving the debt crisis. The slow down in the world economy will depress commodity prices and compound their difficulties. In opposition to the current slow and cumbersome negotiations for debt reform, there is need for quick resolution of the debt crisis calling for a reduction in the debt. Creation of a new international facility for debt restructuring should remain on the international agenda. The revolutionary changes in Eastern Europe and Soviet Union have profound significance for them and the world economy, whose details cannot be forseen, except for the substantial additional demands on international resources that these countries will make. While the developing countries fear that this may reduce the resources available to them, there are resources which will be freed from disarmament and the waning of the threat of nuclear war which should also be taken into account. The review points to the need for an open world trading system as a pre condition for a continuing expansion of the world economy. ILO's 1989 World Labour Report states that the inability of development projects in developing countries to yield promised results is due to the weakness in the administrative service. As there is no measure of public service productivity, the public service organisations are plagued by land productivity in these countries.

World Trade

GATT's Annual Report for 1988 shows that world trade and output increased in the two previous years continued in 1988, when merchandise trade increased by 7 per cent and output by 3 per cent in real terms. Hence for the 4th consecutive year, merchandise trade grew faster than production. Western Europe had the lion share of the world

merchandise trade at 31.4 per cent, intra-Asia trade was only 9.6 per cent of the share but with a significant growth rate from an average 10 per cent between 1980-88 to 29 per cent in 1989. Trade between Western Europe and Asia grew by 21 per cent and with the US by 20 per cent. So Asian countries are becoming the epi centre of the boom in world trade, where there are fewer protectionist barriers — unlike EC or North America. In the highly indebted countries, imports of capital goods have not picked up to compensate for the loss of needed technology. The least developed countries of Africa are in a bad position and need to get on the growth path in trade and output. But with commodity prices not picking up as GATT predicts even in the medium term, their earnings will not rise. And the concentration of Western Europe and America on Eastern Europe does not help the countries. In the Uruguayan round of GATT the countries are engaged in rebuilding GATT on the basis of new sector (services), new disciplines (intellectual property) and correcting old failures (MFL). This will call for compromises but should not involve a surrender of GATT's anti protectionist principle. But there is a real danger of this happening. GATT's Article XIX permits member states to increase protection temporarily for a domestic industry seriously injured by unforeseen import increases. But the chairman of the safeguards negotiating group has now with the support of EC and US tabled a draft agreement stating that the groups should permit permitting country selective restrictions in certain situations. This should be totally rejected — as should any selectivity — in quotas, investments, in safeguards etc.

World Debt

The debt of developing countries and Eastern Europe has risen from $1290 billion in 1989 to $1319 billion in 1990. The 1989 debt increase was $6 billion, with a decline in debt service and debt export ratio due to a) the pace of debt reduction slowed in 1989 from 1988 at $14 billion : b) the appreciation of the US dollar against some of the major currencies during 1989 due to the slow down in the dollar measured debt stock of developing countries : c) overall net lending to all developing countries in 1989 was a little larger than in 1988 and d) in particular commercial bank net lending to the Baker 17 countries was negative at $1 billion in 1989. Apart from the disbursements agreed upon under previously negotiated new money packages, no new money was extended by commercial banks to any of the Baker 17 countries in 1989. There is need for speedy debt and debt service reductions.

World Social Indicators

The World Bank in its current edition of Social Indicators of 1989 listes 94 indicators for human welfare in 170 industrialised and third world countries including GNP (India, China both shown at $330 in 1988), share of agriculture decreasing from 49 per cent in 1965 to 31 per cent in 1985 in India, infant mortality declining from 150 from 1000 in 1965 to 99 from 1000 in 1987, calorie supply per capita 2238 in 1986 for India and 2630 for China, against 2111 in 1965 and 1926 for China, primary school enrolled 74 per cent in 1965 teacher pupil ratio, 58 for India and 10 for Asia and 21 and 19 at secondary schools, illiteracy 57 per cent in 1985 with illiteracy at 71.1 per cent for

India (52.3 per cent for Asia), population in India increasing from 814 million in 1985 to 1010 million in 2000 when China will be 1269 million and stabilising for India at 1766 million against China's 1681, making India the most populus country at that time, females are only 88 in urban and 94 in rural areas per 100 males, 15-20 years ago in India the top 10 per cent of households got 34 per cent of total household income, while the bottom 10 per cent got only 6 per cent (on which there is no recent data), malnutrition under age 5 is 49.3 per cent, one physician for 4880 people 25 to 30 years ago and now one for 2521 for India and 1422 for Asia; and Newspaper circulation is 19.8 per 1000 of the population in India and 26.6 for Asia.

World Employment

An ILO study, world labour report 1989, states that despite the economic growth reported earlier, unemployment remain at an unacceptably high level. Also then number of workers on low paid and insecure employment is steadily rising. There is little of this situation improving. Unemployment in OECD countries is 8.9 per cent (32 million) in 1983 and has declined to a modest 7.3 per cent (28 million) in 1988 and will remain at this level in 1990. In Asia, in the NICs there is an increase in wage employment which exceeds addition to the workforce. In India twice as many jobs have been created in the unorganised manufacturing sector as in the organised sector. The small and informal manufacturing sector absorbed more workers in 1979 and 1980s in all Asian countries - India, Pakistan, Bangladesh and Indonesia. In Latin America there was increased unemployment and in sub Saharan Africa the picture is even bleaker. The ILO report states that an annual economic growth rate of atleast 5 per cent instead of the 1.7 per cent between 1977 and 1987 in Africa is needed to arrest and reverse the downward employment trend.

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II. Agricultural Development in Tamil Nadu

Paddy and other crops

As noted earlier, farmers in the Thanjavur district have harvested about half the samba crop. Both in that district where the remaining 5 lakh hectares have standing paddy crops and in Tirunelvei, Tiruchirapalli, North and South Arcot and Chengai-Anna districts farmers are using the late December and early January rains to complete the growing of their crops of paddy, millets, cotton etc. The delta farmers need water for the last 2 weeks of their paddy crops and the low Mettur level is causing them anxiety. They have urged the chief minister to plead with Karnataka for the release of 6 or 7 tmcft of water which will save the crops. This is happening every year and so there is need for a long term solution which can only be changing the cropping pattern away from Paddy. For this year the rains have helped and

the farmers expect a bumper harvest in the tail end areas of Thanjavur, Pudukottai, South Arcot and the Karaikal district of the Union territory of Pondicherry.

Research results

Research reports for January must begin with report on the release of 16 new varieties of crops at the Pongal by the Tamil Nadu Agricultural University comprising i) rice CO45, a heavy yielder maturing in 140 days : ii) soya bean ADT I suited to rice follows, maturing in 85-90 days : iii) sugarcane COC90063 suited for early season planting, a heavy yielder and CO8021 also a heavy yielder : iv) chilli PEM11 suitable for cultivation in winter tracts and is an early type : v) mango PKM-2 high yielder throughout the year : vi) brinjal Palur I a high yielder : vii) sword bean SBs 1 grown through the year : viii) tree crop Acacia can be grown in sandy loam or red loamy soil : other reports are from TNAU on means of combatting tungro virus infection in rice, from Kuttinad, Kerala on experiments on paddy cum fish culture, from the Indian Institute of Sugarcane Research, Lucknow on its demonstration of COLK 800, as high yield cane variety, from the horticultural research station, Thadiyankudusai, on how to prepare Bordeaux mixture to control plant disease, from Chamavaga nagar and CSRTI on developing drought tolerant mulberry varieties, the fertiliser application schedule for mulberry, from cardamom research station, Kerala which has demonstrated how to grow cardamom for increased profit, from Dindigul where an early maturing variety of avarai has been developed, from AP agricultural university on means of correcting iron deficiency in cashewnut, from the Kakatiya university which has identified a stimulant for silk production, from UAS, Dharwad on combating the lantana bug in crossandria, from the Asat station Kodaikanal on controlling Lavanthas, a lethal pest of fruit trees, from the Anakapalli research station, from TNAU on developing poison bins to trap pests, from UAS, Bangalore on the use of growth promoting chemicals, from West Bengal on some new ginger cultivation techniques, from UAS, Dharwad on combating leaf blight disease of groundnut, from KCACT Tiruchur on pot culture involving wick irrigation, from the poultry centre TNAU Tiruchi on guail farming, from Animal Centre Maraimalai on capital investment and advantages of goat farming, from ICAR, Pusa on how traps can and should be set for the cotton white fly, from the poultry Centre, TNAU, Tiruchi on the use of chlorine to ward off poultry disease, from the veterinary college, UAS, Bidar on countering the tape worms threat to animals, from UAS Dharwad on attending to intercalving problems in buffaloes, from Department of Marine Biology, Kanwar on the mud crab as a useful source of meat, from IARI New Delhi on the improved practices that should be adapted to increase the yield of papaya, from TNAU, research centre Vellore on its successful experiments in controlling mealy bug infection in grape vine gardens, from UAS, Bangalore on air layering and the season for it to increase and propagate the tamarind tree, from Kerala Agricultural university on the guinea grass for soil conservation and from RARS, Guntur on control measures for yoke gall in animals.

Pearl culture

The Tamil Nadu Artificial Pearl culture unit at Mandapam which has been

closed for the past 5 years is being revived with or without the earlier SPIC collaboration. SPIC had contributed 55 per cent of the capital and the Tamil Nadu Fisheries Department the rest. The revived centres artificial pearls is to be made available to the domestic and export marketing.

Animal husbandry

The Tamil Nadu Veterinary University is to launch a research project relating to the animal husbandry needs of the southern districts. This project will be specifically addressed to the needs of this part of the state by the university. In the area of milk production, the state is facing a problem due to a) the increased production of milk by village cooperatives and b) the flush season production. The result is that while the state has chilling facilities for 12 lakh litres of milk a day, the society has procured 14.13 lakh litres a day during December 1989. The contradiction in the situation is that while the district headquarters and chilling centres are attempting to accept all the milk pouring into them, producers are still facing the problem of disposal of their milk . The inadequacies in the distribution systems have not being corrected. Due to the good monsoons, despite the 20 per sent short fall in the North East, milk production has increased, with the producers reporting their yield from the crossbred cattle increasing fast. This is more so in the milk shed tracts of North Arcot, Dharmapuri, Salem and periyar districts, resulting in augmented flows during the flush season of November - December. The Salem Dairy has increased its handling capacity of 2 lakh litres to 2.5 lakh litres in December, Dharmapuri with a handling capacity of 1 lakh litres is receiving daily 1.05 lakh litres, while the daily arrivals in Salem is 2.11 lakh litres. The Vellore plant crossed the 2 lakh litres in 1987. All the plants are bursting at the seams. There is need for expanding the infrastructure in these tracts so that no milk producers union is turned away.

Coffee

Coffee is passing through turbulous times. It is due to both internal causes and external causes. The internal causes include a certain weakness in the Coffee Board which is losing Rs. 60 lakhs a year and sale of coffee in the domestic market is not only stagnant, it is actually falling, being 25 per cent lower in 1987-88 compared to 1986-87. On the export front also the board should review its strategy as there are indication that the glut in the international coffee market is ending, with a severe frost reducing the Mexican crop and the Brazilian crop being disrupted by inflation and high interest rates. So the external markets is not unfavourable now and the board should take advantage of it for 60 per cent of its output are exports. On causes external to the Board, there is the vacancy in the chairmanship which is being filled. There are problem faced by the growers of the minimum release price which needs review, the need for lowering the incidence of levies like the purchase tax and sales tax, the need to grant export incentives of Rs. 2 per kg asked by UPASI, and the conversion of loans granted to growers into long term loans at concessional interest rates. There is above all need for a review of the entire marketing system for coffee, with particular reference to the statutory obligation for growers to surrender their entire production to the Coffee Board

(which rule does not operate for any other commodity) and the need to develop marketing promotion to high value markets like Japan, Switzerland, Scandinavia and Italy and the promotion of value added products like "instant coffee.

Tea

Tea is in good demand particularly Darjeeling. The best autumnals are purchased for export and sold at attractive prices, where the good leaf moved generally at around last year's level. The demand emanates mainly from traditional exports and a blender with selective support from the USSR and local buyers. CTCs were in brisk demand, with Medium CTCs selling at between Rs. 37 and Rs. 41.50 a kg.

Rubber

The clash between the Rubber Board representing plantation owners and industrial users came to a head in December and forced the Board to give the government the green signal for importing in 1988-90, 29,000 tonnes to cover the lean season from February to August. The Board is also taking action to increase the production of the plantation through a) scientific manuring, b) more effective, plant protection measures, c) scientific tapping d) raising new plantations and e) use of chemical stimulation. The long term problem is that the continuing short supply in the production of natural rubber which is 259172 tonnes against a demand of 313830 tonnes annually should be met by increasing the production of synthetic rubber which is 53578 tonnes against the consumption of 84,150 tonnes. All the figures are from 1988-89.

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III. Industrial Development in Tamil Nadu

Industrialisation in the state

The role of the financial institutions in meeting the modernisation and expansion needs of the industries does not call for a "softer" approach because of the high cost structure of the economy. with its his interest rates. For modernisation which is inescapable for Tamil Nadu and Indian industry there is need for a proper costing exercise on a long, term basis avoiding short term profitability and other factors. While the financial system has continued its partnership with industry, it has not responded to the massive shifts in the environment which is one of the factors making for excellance in the financial system. There should be no dichotomy between development and commercial banks which should act in a coordinated manner and promote rapid, modern and innovative industrialisation. Modernisation of Industry has now become a necessity consequent on the globalisation of certain sectors of the economy.

Salem, Neyveli and BHEL

Salem is in the forefront for the location of the proposed Rs. 382 crores stainless steel hot rolling coil project. In this, Salem has to compete with Durgapur. After PIB approves the investment its location will be decided in March 1990. The state government should take an active interest in the location of the project in the state. The Union government has agreed to pay to the state government a

royalty of Rs. 2.50 per tonne of lignite extracted by NLC. The royalty arrears are Rs. 23.37 crores plus interest which total Rs. 46.41 crores. Anticipating the opening of the third unit, the state government has agreed to hand over 11,400 hectares in 37 villages in South Arcot. The NLC requirement of 1385 hectares has been met, with adminis-strative work to acquire the land com-pleted. NTPC has asked BHEL to con-centrate on sorting out the problems faced by the enterprises in running 500 MW generators. These 500MW units, tens of which are now being operated by the corporation, have not yet been stabilised, though they are on stream for the past 3 years. The boiler design must improve the PLE facilities.

ONGC & MPC

ONGC reports that the possibility of discovering additional oil reserves in the Cauvery are bright. Oil drilling in the Cauvery is to produce more oil from 0.2 to 0.5 million tonnes in 1990-91. This will be made possible by setting early production systems "EPS" in Nannilam and Adiyaka-mangalam wells. Already the EPS at Nari-manam was producing well and 700 ton-nes of crude are being transported by road to Madras Refineries at Manali for refin-ing. To transport crude from Narimanam, Nannilam and Adiyakamangalam which are all in Thanjavur district through the railway net work which would be econo-mical' ONGC in cooperation with Southern Railway has created facilities at Nagapat-tinam (loading point) and Tondiarpet (un-loading point). From Tondiarpet, the crude is taken through a pipeline to the Madras Refineries. The project is in the final stages of completion and will start from March 1990. ONGC is also in a posi-tion to supply gas to industries and pro-poses to lay pipeline to important con-suming centres. At present 2 lakh metres of associated gas is being flared daily, which in terms of value lost is Rs. 2 lakhs. The Commission has assured TNEB that it will supply 49,000 cubic metres of gas per day for its ptoposed 5 MW gas turbine in the Narimanam belt. There is some delay in this project because of the equipment procurement. The commission reports that it has crossed the 31 million tonnes of oil production mark in 1989 against 29.3 million tonnes in 1988. To achieve commercial exploitation of oil from the offshore PU-3 and gas from PY-1, a feasibility report is being submitted to the government of India for the production of 7500 barrels of oil per day from PY-3 and half a million cubic metre of gas from PY-1. SPIC reports that its Rs. 101.7 crores Manali Petro Chemical Ltd (MPL) using the state of the art technology (high tech) from France and US will go on stream in April and manufacture annually 12000 tonnes of polyolis. These products are in use for several pharmaceutical and cosmetic products and polyots is in use by automobiles, furniture, refreigeration, insulation panels and sports goods. The demand for the product is booming at pre-sent and they are being imported which, with our foreign exchange shortage, is re-sticted. The plant's products will save Rs. 30 crores annually in foreign exchange.

SIPCOT, C & AG Reports and TNTC

Three industrial units - a toughened glass unit, a hydraulic hose factory and a plastics units, involving a total outlay of Rs. 4.33 crores were launched in January at the SIPCOT complex at Gummudipoondi. Also the foundation for a combination lock unit with 'an investment of Rs. 1.6 crore and a Rs. 2.14 crore plastic future plant were laid. The Comptroller and Auditor General (CAG) in his 1987-88 report has called

attention to the poor recovery performance of both SIPCOT and TIIC which has limited the recylcling of their goods involving the recovering efficiency of the 2 agencies varying from 33.4 per cent to 56 per cent during 1984-85 to 1987-88, resulting in poor or negative plough back of loan funds increasing the financial cost. In both companies the fixing of targets for recoveries was unscientific, being based on the performance of the previous years and not what should be recovered. It notes that this led SIPCOT to treat an interest due of Rs. 5.24 crores as "doubtful recovery" and TIIC to write off Rs. 7.09 crores of its loan. In his report, CAG states that a majority of the 36 Tamil Nadu government owned companies which finalised their accounts for the year ended March 31, 1988 record losses - 23 registering Rs. 27.97 crores loss and only 13 showing a profit of Rs. 7.80 crores. The report points out that the aggregate accumulated loss of 25 companies at Rs. 182.41 crores is more than their total capital of Rs. 68.05 crores. Three major industries, SIDCO, Pallavan Transport and TN Civil Supplies account for most of the accumulated loss at Rs. 126.14 crores (64.2 per cent). The government's total investment of Rs. 381.29 crores in 72 companies yielded in 1987-88 a return of Rs. 94.2 lakhs, being 0.3 per cent of the equity investments. On this basis, the question is once more posed by the Bulletin whether the government should not get out of these undertakings and turn them over to the private sector. CAG in the report also indicts the Tamil Nadu Electricity Board for the absence of a proposed monitoring system, regarding procurment, consumption, etc. and inefficient material budget practices. Its lapses include the failure to claim MODVAT benefits from the suppliers of transformer oil and that the special meters procured at a cost of Rs. 1.41 crores to assess peak hour consumption were lying idle for seven years. Its other faults are using 'outside agencies to repair transformers when its special repair yards have an unused capacity of over 30 per cent, resulting in extra expenditure of Rs. 1 crore, non acceptance of lowest tender, involving an additional expenditure of Rs. 10.57 lakhs. CAG also refers to the Tamil Nadu Newsprint and Papers Ltd. which has sustained a cumulative loss of Rs. 40.25 crores upto September 1987, in 8 years. This is due to the company going in for the highly risky and unproven Rs. 153 crores bagasse based plant which had been tried and failed in Latin America and which was not based on a completed pilot plant experiment, resulting mid stream correction in processing engineering and design. CAG also points out that the Overseas Manpower Corporation and Corporation for the Development of Women has not served their purpose, the former finding employment only for 7 per cent of the total number who went abroad for employment. The women's corporation has many actors to channel government funds levels and even so 41.2 per cent of the funds it obtained from March 1989 remain unutilised. The report lists a whole host of the infirmities of the Tamil Nadu Tourism Corporation, particularly in its collaboration with NRIs, its hotel cum amusement park. It calls attention to the loss of Rs. 22.25 lakhs in operating air conditioners coaches by Thiruvalluvar Corporation. With this record, the need for a drastic change in government taking on responsibilities for production is urgent. Accordingly it is regretable that the state government is insisting on taking over 6

closed textile mills through the Tamil Nadu Textile Corporation, even though some of the owners have expressed the desire to run these mills. The promoters of three of the mills have offered to manage their affairs again. The state government should not be misled by the present favourable market situation in the spinning industry. This will not last and the state will be landed with cumulative losses again.

Automobile components, sugar mills and handlooms

Planning Commission working group on industry states that the growth rate of the units producing automobile components is likely to slow down due to the decline of growth in automobile industry. Additionally there is the problem of the creation of additional capacity in the North and West where the main automobile producers are located, the raw materials of the industry, steel and aluminium, not being available in the state, and the superior capacity and productivity of MRTP and FERA companies are located in the backward districts in the North which can expand capacity. The state's advantages for this industry are the port facilities for the import of raw materials and export of cars, the availability of a strong component industry in the state and the skilled labour in the state and these should be used to the fullest along with the government meeting the demands of new units particularly in regard to the tax structure. For the new sugar factories are to be set up in the state — at SriVilliputhur, Polur, Ambasamudarm and Kallakurichi — and the union clearance for them is awaited. With these, the state will have 38 sugar mills with a crushing capacity of 96,150 tonnes, calling for an increase in cane production from the current 2.20 lakh hectares to 3.84 lakh hectares. As sugarcane is a water guzzling crop, its extension in the state which is short of water should be carefully reviewed. On handlooms, two issues are highlighted in January. First, the first handlloom census comes out with the startling revelation that 1/14 of weavers, that is 2.04 lakh weavers are living well below the poverty line, earning Rs. 200 per month and another 45 per cent (13.34 lakhs) are living below and at the poverty line earning between Rs. 201 to Rs. 500 (Rs. 500 per month is the poverty line). The government consoles itself with the fact that members of many weaver families earn other income, on which no data is available. Second, the Tamil Nadu weavers have petitioned the state and union government to ensure that the private and cooperative spinning mills meet the need for yarn by the weavers. The promise to supply them with 1000 bales hank yarn per month is not being honoured not even a bale of yarn has been supplied, according to the TN Handloom Industry and Trade Association who claim that the sharp fall in the price of yarn has led to this situation. To avert weavers closing down, the yarn must be supplied atleast by TNTC.

Leather

The leather goods exports may show Rs. 2200 crores as has been earlier referred, with increasing emphasis on value added export. The council for leather exports has proposed the creation of a Rs. 400 crores medernisation for the leather industry. The World Bank is providing Rs. 6 crores to the Central Leather Research Institute in Madras for the development of tanneries.

footwear units and chemical auxiliaries. The institute states that its VIII Plan through adopting modern tanning techniques and producing value added items to benefit rural people, will create a strong material source at the rural side, which is a focus on rural oriented activities. The government has asked the Council for leather exports to formulate a detailed plan to reach an export target of Rs. 10,000 crores by the end of the decade. This represents the state of the industry and the quantum jump in exports expected of it. And for this purpose, the Union government is setting up a centre for training and product development attached to the leather centre in Madras of the Council for Leather Exports. The state government has finally decided to grant a 25 per cent subsidy to the leather units for setting up common effluent treatment plants. This matches the Union's scheme of 25 per cent and increases the state's share of the subsidy which it had fixed at 15 per cent till now. This has resulted in the leather industry declaring its willingness to cooperate with the government in upgrading the technologies for disposal of effluents from the tanneries. A number of them have put up Rs. 40-50 lakh plants. Now they face the problem of sludge amounting to 4-5 tonnes. The Pollution Control Board should locate sites for disposing of the sludge.

Private Sector Reports

Binny reports for the year ending June 1989 that its programme of modernisation of textile units is about ready to be operated, and that its engineering division has an improved order book position and steps for diversification in its product lines. Despite some unfavourable factors such as high labour and utilities costs, low production and the one and a half power cuts, it has earned an operating profit of Rs. 687.61 lakhs against last year's loss of Rs. 6.78 lakhs. Carborandum Universal for the year ending August 31, 1989, reports setting up two more factories, one for the manufacture of refractories in Tamil Nadu, and the other for electro material growth in Gujarat. Also its diversification project for the manufacture of industrial ceramics is progressing well. The sales for the first 3 months of the current year have been higher, though the cost esclation is squeezing the margins. The annual report for 1988-89 of the chemical and plastics, India reports its divisions operating well, the PVC section also doing well, and its application for an increase in its export from 15,000 tonnes to 30,000 tonnes, the caustic soda division facing excess production is increasing its exports, — the solvents division has produced 10,068 tonnes of chloromethas and the refrigerant gas project has been luanched. In Cuddalore units are coming up.

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IV. Education, Science and Health

Educational reforms

On the basis of the teacher training programmes and new text books Introduced in the state, the schools have been functioning more satisfactorily this year. Operation Black Board has been picking up in the state. At the University level, the delay in the grant

of autonomy for one of the city colleges, Meenakshi College for women, has upset the study programme of the students and its evaluation at the end of first semester. Both the University and the government granted autonomy for a year, because its inspection commission wanted more hostel accommodation and sports facilities. But the UGC was right in pointing out that autonomy is not an annual event, but is for a five year term, with a mid term evaluation. This is now being sorted out but in the meanwhile the college programme is affected.

INSAT

ISRO announces that the INSAT-ID, the last of the first generation INSATs is to be launched in June from Cape Canaveral. It was damaged on its first launch some months ago, has now been repaired. It also announces that the Augmented Satellite Launch Vehicle (ASLV) will be launched in the beginning of 1991, followed by the Polar Satellite Launch Vehicle (PSLV). The Indian Remote Sensing Satellite IRS-II is to be launched in June 1991, from Bykanov USSR. The country's first indigenous satellite, INSAT-2, will be launched at the end of 1991. All the mechanical systems have been thoroughly tested and are satisfactory.

Science

The country's first super conductor device with commercial application will be fabricated and ready in a year. It will be used in geoprospecting for minerals and medical diagnosis. IISC scientists report that for the first time in South East Asia, they have successfully developed thin synthetic diamond film which has a wide range of applications, especially in high tech areas like space communications, semi-conductors, and nuclear reactors. The Department of Electronics is exploring ways of making the computer network operating systems software (OSINET) development by IIT, Madras, commercially available. The software effectively links up and operates computer in a local area network. The Risk Capital and Technology Finance Corporation announces that it has formulated a special scheme for providing venture capital for the production of R & D activities, in companies, cooperative societies, individual associations, trusts and registered services. A FICCI study shows that the majority of companies which import technology, simultaneously undertake inhouse R & D programmes to upgrade their technology and improve their product lines. UNESCO in a study points out that there has been a sharp increase in scientific and technical personnel in all countries. In India the problem is the poor quality of the science degree holders, who face inadequate laboratory equipment, shift of medium of instructions from English to local language, without adequate preparation and increasing admissions of students who manage to score higher marks through use of devious methods. In Madras a Rs. 16 crore high energy compact cyclotron has been set up in the University of Madras, which jointly with the Kalpakkam Centre is to work on nuclear medicine.

Health

The Comptroller and Auditor General in his report for the year ended March 3, 1988 states that inadequacies and lapses in the implementation of the Integrated Child Development Scheme in the state in recent years has

resulted in its failure. A substantial part of its funds have not been used since 1975 (out of Rs. 648 lakhs, only Rs. 403 lakhs have been spent), 144 sub centres have not become operational. This is in a sense confirmed by the Director of the Institute of Social Pediatrics, Stanley Medical Hospital, who points out that despite having established a Maternity and Child Health (MCH) wing in the Madras Health Secretariat, the present state of MCH, in Tamil Nadu is very poor, pointing out that even today 90 per cent of pregnant women in Tamil Nadu are anaemic, resulting in 20 per cent of the maternal mortality in the state. The Institute of Child Health states that concerted action is to be taken to reduce infant mortality in Tamil Nadu to 60 per 1000 this year from the present 74. The high rate is due to low birth weight, diarrhoea and vaccine preventive diseases such as measels, tetanus, malnutrition and pneumonia. The Union government reports that the birth rates in Kerala has been brought down to 19.1 per cent, with 60 per cent of the eligible couples brought within the family welfare scheme. This infant mortality rate is 27 per 1000 — due to higher literacy rates among women. The Union government states that the new family welfare strategy will aim at delaying the marriage age for boys and girls, adequate spacing measures between 2 births, and methods for termination of pregnancy. The government also announces the launching of a major media campaign to sell iodized salt to groups — traders, health workers and opinion makers and consumers.

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V. Employment and Labour Relations

The government announced in January that the Jawahar Rozgar Yojana is under review and that there are proposals for restructuring it to achieve the objectives of employment guarantee. CEI reports that an analysis of employment data in the organised sector shows that the engineering industry generated considerable employment during the 11 years 1974-75 to 1981-85. The number of workers in the industry increased from 1.26 million in 1974-75 to 1.66 million in 1985-86, which was an increase of 2.4 per cent compound per annum. Employment in all industry during that period recorded a slower growth of 8.1 per cent compound per annum, totalling 4.76 million in 1974-75 and 5.82 million in 1985-86. Chemicals and chemical products produced the highest employment growth at 4.3 per cent compound per annum, increasing from 0.23 million to 0.37 million. The declining trend of employment in the traditional industry, cotton textiles from 0.93 million to 0.78 million which is a decline of 1.6 per cent compound per annum is noted with concern. Engineering industry shared 26.6 per cent of total employment in all industry, followed by Cotton textiles at 13.4 per cent down to paper and paper products. The public sector has added to employment much more than the private sector. The rise in wages was ahead of labour productivity. The December issue of

the Indian Labour Journal on the Index number of wage rates, defines wage rate as the price of working energy spent by a worker either during a specified period of time or a specific measure of performance. The figure of earnings do not provide a scientific basis for the analysis of trends in the price of labour because it is influenced both by quality and quantity of labour input. Higher labour input through overtime or higher output for the same labour may with the help of better machinery result in higher earnings, even when the wage rate per unit time or output remains the same. For wage rate index number, the wage rate is the sum of basic wage plus dearness allowance. The Index number of wage rise, set forth in table I, there are relative changes in wage rates in selected industries. Among the 3 sectors, the highest percentage (9.3 per cent) rise in Index number of wage rate is in manufacturing followed by mining 4 per cent and plantation 6.7 per cent.

VI. Other Items

B.V. Narayana Reddy lecture

In early January, Memorial lecture for Dr. B. V. Narayana Reddy was delivered in Bangalore on the relation of Economics and Ethics. The methodological constrast between the two disciplines was brought out and the ethical problems facing the country in regard to unemployment, poverty and inequality were outlined, showing that economics cannot be separated from ethics.

Literacy and Adult Education

There were 5 events connected with literacy in January. There was a meeting of the All India Committee of the convenors of the Bharat Gyan Vigyan Samithi held in Delhi in mid January. It reviewed the preparation for launching the Jatha and made decisions on the organisors and coordinators to be appointed to cover the whole country. Second, there was the launching in Tamil Nadu of the International Literacy Year proclaimed by the United Nations for 1990 by the Governor and Minister of Education. Through the work of the Madras Colleges, illiteracy in Madras city will be liquidated this year, and through the Arivoli Iyakkam 5 districts are to be made literate in 1989. Third, the all India launching of the International Literacy Year by the Prime Minister was organised at Vigyan, Bhavan, New Delhi at which for the first time the new Prime Minister spelt out the priority of education for his government and the high place to be given to literacy in it. This was further elaborated by the Deputy Chairman of the Planning Commission who pledged the Commission's commitment to the cause of literacy. Fourth, there was a function to celebrate the laying of the foundation stone by YWCA for its centenary building, at which the excellent work being done by it for literacy was emphasised

through one of the new literacy learners addressing the meeting on what she has learnt through literacy, which was above all a sense of self confidence. Here too the literacy plan for Madras and the 5 districts in this International Literacy Year was brought out. Finally there was the 2 monthly meeting of the governing body of SRC at which the plans for the International Literacy Year for the state were reviewed and approved and the supporting action of the centre for them. There was a meeting of the executive committee of TNBCE which discussed the problcm faced by the voluntary agencies in operating literacy programmes and the corrective action to be taken by NLM.

Autonomy for AIR and Doordarshan and autonomous colleges

There was a meeting at the LLB centre on the bill which has been presented to Parliament on autonomy for the AIR and Doordarshan. There was general and enthusiastic approval of the autonomy for the media. In the discussion which followed, one group favoured working within the proposed provisions of the legislation to develop conventions to safeguard the autonomy of the two media and the independence of the programme operators. The other group proposed certain amendments to the clauses to strengthen the move for autonomy. On the autonomous colleges, for the first time there was a meeting of the students of the autonomous colleges in Madras to evaluate the functioning of the autonomous colleges. There was general safisfaction with the freedom, staff and administration had developed. There was a general feeling that students should participate in the autonomy on both policy and administrative matters, that there should be more use made of autonomy to develop innovative curiculum. In this matter, the feeling was against the interference of the university.

IIC

In the India International Centre, in January there wes the monthly panel discussion, starting the new year's series on individual industries. The first industry which was revised in January was cement where the positive effects of the decontrol which had been effected were pointed out. The need for the industry meeting international competition and national demands by cutting costs and not simply asking for more and more government concessions was emphasised. There was also a meeting of the standing finance committee at which the Budget for 1990-91 was reviewed and approved for placing before the Board of Trustees. The audited accounts for 1989 January to 1990 March were reviewed and approved. The cash flow position of the over Rs. 1 crore silver jubilee project of the centre was also discussed.

Festival of Soviet Publications

On the occasion of the visit of some 20 editors and journalists from the Soviet Union, there was a very impressive organisation of the new publications coming out of the Soviet Union in which there was a marked openness and note of self criticism. At a meeting of Soviet Indian publishers on the future dimension of Indo-Soviet Cooperation, it was suggested that after over 3 decades of help from the Soviet Union, the time was now appropriate for India to contribute to the Soviet Union with regard to the form and

probelms of the mixed economy which was now developing there and provide it with some services like software in which India has a comparative advantage.

Jain Vidyalaya

On the occasion of the 100th Birthday of the late Shantivijaji there was the inauguration of the women's college in the campus of the Vidyalaya. The emphasis in both the school and the newly inaugurated college is the education of women and girls on the basis of the concepts of humility, love and friendship for which Shantivijaji stood. It was a fitting honour to his birth centenary.

First Article

The paper, Mandal Commission Report on Backward Classes: Should it be Revived or Revised ?, by N. Subba Reddy for the workshop on Backward Classes and Reservation held in February 1990 appears as the first article.

Second Article

A note on Teaching of Economics appears as the second article.

Publication Abstracts

The abstracts of recently completed research project brought out in the institute by the faculty members appears in this section as the third article.

M I D S News

Dr. C. T. Kurien participated in the India International Centre's (New Delhi) Seminar on "Industrial Perspectives for the Eighth Plan" and chaired the seminar on February 17.

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Dr. Padmini Swaminathan presented a paper on "Engineering Industries in the 80s" at a Panel Discussion organised by the Economic Affairs Group of the India International Centre, New Delhi, on Friday, February 16.

Participated in a seminar on "Perspectives of Industrial Development including Rural Industrialisation" on Saturday, February 17 at the India International Centre.

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Dr. S. Janakarajan presented a paper on "Interlinked transactions and the market for water in the agrarian economy of a Tamilnadu Village" at a seminar organised by the Presidency College, Calcutta during February 23-25. Broad theme of the seminar was "Aspects of Development of the Indian Economy".

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A meeting of the Academic Council was held at 10.30 a.m. on March 2. It was followed by a lunch where the faculty members too were invited. There was a post-lunch open session of the Academic Council along with all the faculty members in which general research policies were discussed.

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The Institute organised a Workshop on Backward Classes & Reservations on March 3. There were in all five papers covering the various aspects of reservations for the SCs, STs and OBCs. These papers were by Dr. C. Parvathamma, Mr. G. A. Rajkumar, Dr. N. Subba Reddy, Dr. G. Ghanshyam Shah, and Dr. P. Radhakrishnan. Some of the papers and a summary of the presentations and discussions will appear in the MIDS Bulletin.

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March Workshop Paper I

Mandal Commission Report on Backward Classes : Should it be Revived or Revised ?

N. Subba Reddy
Senior Fellow, CESS, Hyderabad

As the Janata Dal government at the Centre has declared the implementation of the Mandal Commission recommendations as one of its commitments to the nation, it is necessary to carefully examine the report of that Commission, calling attention to the draw-backs therein, and to sound a note of caution against taking any hasty step in this regard. This paper seeks to urge that it is imperative to conduct more detailed investigations to identify the 'Other Backward Classes' (OBCs) than was done by the Mandal Commission. (I was myself a Member of a Committee which offered some suggestions to the Mandal Commission at the initial stages. But as in the case of commissions of this nature, including the recent Tamil Nadu Backward Classes Commission with which also I was similarly associated, the final operations of the Commission and the treatment meted out to them by the Governments take a political turn, quite at variance with academic views).

It is also sought to be made clear at the very outset that the very nature of the problem of identifying the OBCs is so complex that an all-India list of such castes and communities can only be a collation of the lists prepared at the level of the states as a result of painstaking investigations conducted by respective commissions, after paying attention to the special features of regional social structure and other local conditions. Or, if an all-India Commission is to grapple with this problem, it is possible only if there are sub-commissions for all the states to take care of the distinct colours at different points of the spectrum. The Mandal Commission did not have such an elaborate organisation.

Vagueness of Constitutional Directive

There is a reasonable doubt expressed in some quarters whether the Constitution requires the Government of india to prepare a list of OBCs for the entire country on its own. As regards the SCs and STs, Articles 341 and 342 specifically enjoin — that lists of SCs and STs should be prepared. Any lists or subsequent additions and deletions need to be approved by the Parliament. But there is no clear-cut provision in the Constitution directing the Government of India to prepare a list of OBCs for the country as a whole. Article 340 and clause (3) of Article 338 have reference to OBCs. Article 340 says that "the President may by order appoint a Commission consisting of such persons as he thinks fit to investigate the conditions of socially and educationally backward classes within the territory of India and the difficulties under which they labour and to make recommendations as to the steps that should be taken by the Union or any State to remove such difficulties and improve their conditions ...". While this Article does envisage an enquiry into the conditions of the OBCs and initiation of ameliorative measures, it does not explicitly refer to the preparation of lists of OBCs.

It is perhaps possible to argue that it is implicit in the Article that the Commission appointed for the purpose should first identify the groups and then enquire into their conditions. Yet one cannot help feeling that the Constitution did not make explicit what needed to be made explicit. When one contrasts it with the Articles 341 and 342 regarding SCs and STs, the omission becomes glaring. Then, Clause (3) of Article 338 comes almost as an afterthought. This Article goes under the title, 'Special Officer for SCs and STs', and the first two clauses refer to the appointment of a Special Officer by the President and his duty "to investigate all matters relating to the safeguards provided for the SCs and STs under the Constitution and report to the President upon the working of those safeguards". Clause (3), which follows, reads : "In this Article, reference to SCs and STs shall be construed as including reference to such other backward classes as the President may, on receipt of the report of the Commission appointed under Article 340, by order specify and also to the Anglo-Indian Community".

Such adventitious allusions to the OBCs in the Constitution have led to but a lukewarm attitude on the part of the Union Government towards this issue so far. Kalelkar Commission's report and Mandal Commission's report have been shelved, and at the level of the Central Government no action has been taken to provide any special safeguards to the OBCs. But as far as the State Governments are concerned, some of them relied on the old lists of backward classes prepared by the departments of education to start with and revised the same from time to time for appropriate action under Articles 15 (4) and 16(4) of the Constitution. Some of the States appointed Commissions for the purpose. And following judicial pronouncements calling for objective criteria to identify the OBCs, new Commissions have been appointed to revise the recommendations of the previous Commissions.

A look at the reports of some of the Commissions compels me to state categorically that a fool-proof determination of the proportion of backward

and forward sections cannot be done without a complete census of all the castes and communities (leaving out the SCs and STs, who are already enumerated in the decennial censuses). The Mandal Commission, under its own practical constraints, could conduct detailed surveys only in one urban Centre and in two villages in every district. This falls far short of what is reasonably required for the purpose.

Assumptions of Mandal Commission

Now let us go into some details of the work of the Mandal Commission. The major flaw in that report is the assumption of an unlikely figure of 17.58 per cent as the proportion of all the forward castes in the total Hindu population of the country. This assumed figure becomes the basis for the estimation of the OBCs. The procedure adopted by the Commission is as follows: The SCs and STs for which census figures exist, constitute 22.56 per cent of the total population (as per 1971 census). The major religious communities other than the Hindus, for which also there are census figures available constitute 16.16 per cent. To these two is added the figure of 17.58 per cent representing the forward castes among the Hindus (which is said to be an extrapolation from the 1921 census figures for some of the major forward castes of the country). These add up to 56.3 per cent. To the remaining 43.70 per cent is added another 8.4 per cent which represents the estimated proportion of the backward sections among the non-Hindu Communities. Thus the proportion of OBCs (approximately 52 per cent) is figured out on the basis of a procedure which starts with an assumed figure for the forward classes. While there are census figures for SCs, STs and major religious communities, there has been no enumeration of Hindu forward castes or OBCs since 1921. The assumed proportion of 52 per cent for the OBCs is the result of subtracting from the total population of the country the 1971 census figures for the SCs and STs and other religious communities plus the extrapolated figure for some of the forward castes. Hence the figure of 52 per cent for the OBCs is not based on a 'fresh' identification of the backward castes and communities. After first arriving at the figure of 52 per cent for the OBCs, the Commission later sets about to identify different castes and communities to be fitted into that procrustean bed.

Now let us look at the castes and communities which were identified as forward sections by the Mandal Commission. The caste groups and their estimated proportions in the total population of the country are as follows:

Brahmins (including Bhumihars)	5.52 per cent
Rajputs	3.90 " "
Marathas	2.21 " "
Jats	1.00 " "
Vysyas, Banias, etc.	1.88 " "
Kayasthas	1.07 " "
Other forward Hindu Caste groups	2.00 " "
	17.58 per cent

None of the above listed forward castes except Brahmins, are found in the 4 states of southern India. Taking Andhra Pradesh alone, all the populous land-owning castes such as Reddy, Kamma. Kapu, Telaga, Velama, Raju, etc. (which are among the forward sections), constitute definitely more than nine per cent of the total population which is the proportion of the land-owning castes in the above extrapolation for northern India. So also should be the case with the land-owning castes and communities in Gujarat, Bengal, Orissa and Assam which too have dominant, land-owning castes other than what are mentioned as the forward castes in the Mandal Commission. Hence there is a definite shortfall of considerable degree in this adhoc estimate of the proportion of forward castes for the whole country by the Mandal Commission. Also, if religious communities (other than the Hindus) constitute 16 per cent of the total population and the backward sections amongst them constitute 8 per cent of the total population, it means 50 per cent of them are forward as against only 18 percent of the Hindus being listed as forward. This is a questionable assumption as the Muslims, Sikhs, and Christians are known to include many converts from the lower stratum of the Hindus who continue to be backward economically, educationally and even socially. Such a mistaken adhocism needs to be guarded against.

This note of caution becomes all the more necessary because the procedure adopted by the Mandal Commission has already become a model for some of the Commissions subsequently appointed by the State Governments. For instance, the Muralidhara Rao Commission on Backward Classes appointed by the Government of Andhra Pradesh in 1982 outlines the procedure adopted by it for estimating the proportion of backward classes in the state population as follows : "Estimating the population of forward Hindu castes and communities at 18 per cent (the figure adopted by Mandal Commission being 17.58 per cent), the population of forward caste communities, the SCs, the STs, Muslims, Christians, Sikhs, Buddhists and Jains roughly comes to 47.09 per cent (18+29.09). In other words we may place this at 48 per cent and the remaining will account for the backward classes (52 per cent)". In one respect, this Commission deviates from the Mandal Commission, but glosses over it by saying that "here the only difference is that we are not adding again half of the percentage of the minorities population, since we consider that the backward class population among the minorities is not so substantial" (p.13). The religious communities other than the Hindus constitute 12 per cent of the total population of Andhra Pradesh. And if we follow the procedure of the Mandal Commission and add 50 per cent of the minorities to the backward classes, this accounts for another 6 per cent raising the proportion of OBCs to 58 per cent of the State population.

There is no reasonable basis for the presumption made by the Muralidhara Rao Commission that the backward sections are not considerable among the religious minorities in A. P. This only points to an unconcealed motivation on the part of the Commission to fix the proportion of OBCs at about 50 per cent by hook or crook. After traversing such a criss-cross path, the conclusion is trenchantly stated by the Commission : " Therefore, throughout the report hereafter the population of backward classes has been taken at 52 per cent of the total" (Ibid).

The strange thing to be noted here is that the A. P. Commission blindly followed the Mandal Commission in assuming that 18 per cent of the total population belongs to forward classes, even though the proportions of most of the groups mentioned under this category in the Mandal Commission are not likely to be equivalent to the counterparts in A. P. But at the same time, the Muralidhara Rao's Commission does not accept the Mandal Commission's assumption that 50 per cent of the religious minorities are likely to belong to backward classes and treats all of them as forward. We are led from one level of adhocism to another level of adhocism.

Criteria adopted by Mandal Commission

We may turn to the criteria adopted by the Mandal Comission for determining the social and educational backwardness. Though they represent an improvement over the procedures followed by the Kalelkar Commission, the instruments and the methodology of the Mandal Commission turn out to be disappointing. The Mandal Commission formulated eleven criteria under three subheads as shown hereunder.

A. Social

(i) Castes/Classes 'considered as socially backward by others.

(ii) Castes/Classes which mainly depend on manual labour for their livelihood.

(iii) Castes/Classes where at least 25 per cent females and 10 per cent males above the state average get married at an age below 17 years in rural areas and at least 10 per cent females and 5 per cent male: do so in urban areas.

(iv) Castes/Classes where participatior of females in work is at least 25 per cent above the state average.

B. Educational

(v) Castes/Classes where the number of children in the age group of 5-15 years who never attended school is at least 25 per cent above the state average.

(vi) Castes/Classes where the rate of student drop-out in the age group of 5-15 years is at least 25 per cent above the state average.

(vii) Castes/Classes amongst whom the proportion of matriculates is at least 25 per cent below the state average.

C. Economic

(viii) Castes/Classes where the average value of family assets is at least 25 per cent below the state average.

(ix) Castes/Classes where the number of families living in Kuccha houses is at least 25 per cent above the state average.

(x) Castes/Classes where the source of drinking water is beyond half a kilometer for more than 50 per cent of the households.

(xi) Castes/Classes where the number of households having taken consumption loan is at least 25 per cent above the state average.

The social indicators were given a weightage of three points each, the educational indicators two points each, and the economic indicators one point each. As the wegihts of all the eleven indicators add up to 22 points, the

Mandal Commission had the cut-off point at the mid-way level of 11 points, and grouped the castes and communities into forward and backward as they fall on either side of the dividing line. There are some major deficiencies in the criteria forumulated and the way they are used by the Mandal Commission. These need to be discussed in detail.

Social Backwardness

Among the eleven criteria formulated by the Mandal commission, perhaps the weakest is the very first one, viz., "Castes or Classes considered as socially backward by others". Whether a caste or a class is considered backward by others is itself dependent on certain criteria and the job of a Commission is to identify them. Without the latter the former remains a subjective impression or an enlightened guess.

The second criterion formulated by the Mandal Commission refers to manual labour as the main source of livelihood. This itself needs amplification. Should we necessarily classify a caste or a hereditary group of small farmers mainly dependent on their own family labour as socially backward ? Here perhaps a distinction has to be made between manual labour of the self-employed and the manual work of those whose labour is hired out. A point for consideration is whether only those who depend on wage labour should be considered as socially backward (and leave out the self-employed manual workers) or take both the categories and give them different weights. In fact, this is more an economic category than a social one.

The third criterion of the Mandal Commission refers to the practice of early marriages before the seventeenth year as an indicator of backwardness. But it needs to be considered whether this criterion is relevant for South India. In this region some backward sections may be practising early marriages, but some of the most forward sections also were practising child marriages and had a normative predilection for the same.

The fourth criterion refers to female participation in work. Here it needs to be considered whether it should include any kind of work or only manual work, and again whether it includes both the self-employed and the wage labourers.

Educational Backwardness

The fifth, sixth and seventh criteria adopted by the Mandal Commission are meant to measure the educational backwardness of castes and communities. One of these criteria refers to the proportion of children in the age group of 5 to 15 years who never attended the school. But there may not be wide inter-caste disparities in this regard in some of the states which have achieved considerable success in the spread of primary education, particularly by offering incentives such as nutritious mid-day meal programme. Another criterion, viz., the rate of school drop-outs in the age group of 5 to 15 years is again likely to be subject to the influence of the above factor. The last criterion in this category refers to the proportion of matriculates in any caste or hereditary group. This may be a good indicator but should be used only as a base line in a hierarchy of related indicators.

One of the questions we should ask ourselves in this regard is when exactly

education begins to operate as an effective instrument of social progress or aconomic advancement. Does the stage of matriculation (10th Standard) really represent the take-off point in the present day world? Perhaps for a general social awareness, matriculation is an important stage to be considered. But for effective advancement of one's career and status, graduation seems to be the minimal required qualification, while of course, technical, professional or post-graduate education is a more certain level of advancement. The Mandal Commission stops at the consideration of the proportion of matriculates. But perhaps the proportions of all the three above categories, the matriculates, the graduates and the post-graduate-cum professionals in different castes and hereditary groups need to be considered, besides the overall literacy level among those aged above fifteen years.

Economic Criteria

Two of the valid economic criteria formulated by the Mandal commission refer to the value of average family assets and the quantum of consumption loans respectively. Here the difficulty of obtaining the exact date is one of the important questions to be kept in mind. In both these respects the Mandal Commission has adopted 25 per cent deviation from the state average as an indicator of backwardness. But the degree of deviation should be related to the nature of the criterion. There is a separate criterion which pertains to the type of house. This may provide a useful cross-check for the criterion of assets, but, that way, some more economic criteria than what Mandal Commission has considered, need to be included by future Commissions.

One criterion which the Mandal Commission has given as an economic category does not seem to be relevant for some states. This refers to the distance of the source of drinking water. Some states have done a good job in providing drinking water facilities even in remote villages. And where the source of drinking water is really at some distance in any village, the disadvantage is experienced by all castes and classes alike.

Methodological issue in the use of the criteria

There is one important methodological issue which needs to be discussed. The Mandal Commission has adopted a cut-off point in respect of each criterion in such a way that it amounts to a dual option of yes-or-no type. Let us consider for example three of them : (i) Female participation in work being 25 per cent more than state average, (ii) marticulates being 25 per cent below the state average, and (iii) family assets being 25 per cent less than state average. There may be a caste or a hereditary group among whom female participation in work is 24 per cent more than state average, matriculates are 24 per cent less than state average, and the family assets are 24 per cent less than the state averege. Such a caste or a hereditary group does not get any weight under any criterion to be considered for inclusion in the backward category according to this formula. But another caste or group will come to be considered under the backward category if the proportion of matriculates amongst them is 26 per cent less than the state average, notwithstanding its having much better position than the state average with regard to family assets and much lower proportion of female participation in work than the state average.

A more accurate yardstick is a graded scale, wherein you give a certain weight to each reasonable interval in respect of every criterion. After all, backwardness and forwardness are relative categories, and castes and hereditary groups fall into finely graded positions along a continuous scales. The cumulative index of a group's position should be the resultant of the severally graded positions occupied by it in terms of different criteria along different dimensions of social reality. This may involve a more complex analysis but will definitely be a more reliable measuring rod than the one adopted by the Mandal Commission.

While the cumulative indices of relative positions of castes and hereditary groups is one aspect of the matter, the actual cut-off point to be adopted for the determination of backwardness is another aspect. While trying to determine the relative backwardness of groups the point of reference is an important factor. With reference to which section of the population a certain caste or group is to be declared backward? One alternative is to adopt a reasonable deviation from the cumulative index for those non-Brahmin groups which are by all counts accepted as forward. The other is to adopt a reasonable deviation from the cumulative state average. In this context we have to specially bear in mind two important judicial pronouncements, one stating that the backwardness of a caste or a group should not be judged relative to the highest caste, and the other stating that the deviation from the point of reference should be considerable and not marginal for deciding the backward status of a caste or a group.

Need for Censuses and Surveys

There cannot be any short-cuts to the determination of social and educational backwardness of people. A census of all castes and communities need to be conducted which should turn out data on the population, educational levels, occupational categories, income levels, consumption loans, migratory compulsions, types of houses etc. In addition to the census, sample survey should be conducted on segments of each caste/community with a view to figuring out the more subtle points of social distance. These should bring out the existing hierarchies, symmetrical and asymmetrical service relations, the pattern of commensal interactions, customary norms on food preferences and prescriptions, access to places of worship and public amenities, norms regarding residential locale, etc.

Each criterion or indicator, whether it is social, economic or educational, should be graded along a scale, giving a specific weight to each interval. Based on the cumulative weightage different castes, communities should be arranged in a hierarchical series. Then after careful assessment and perceptual reflection, a cut-off point should be adopted to demarcate the backward sections

Inter-Caste/Community Disparities within the OBCs

One major question that should be squarely faced is whether all the groups falling below the cut-off point are roughly comparable to one another, or there are wide disparities amongst them. If there are wide disparities among them what should be done to ensure that the more advanced among the OBCs do not corner all the benefits, leaving the more backward sections high and

dry ? Even without conducting a special survey, one can point out that there is a wide gap between barbers, washermen, smiths, carpenters, etc., on the one hand, and some of the traditionally land-owning castes listed in the category of OBCs on the other. There are already protests, though not very loud, that the benefits are not reaching the really backward sections of the people.

One solution which can be thought of is to divide the backward sections into a few sub-groups, each consisting of castes/communities which occupy proximate places on the scale of backwardness and prescribe quotas of reservations and special benefits in proportion to the population of each sub-group. When a general census is conducted, the population of each caste/community will be known and it should be heeded in this regard. Classification of people into backward and more backward sections has been struck down by the Supreme Court. But a few States did divide the OBCs into distinct units and prescribed certain quotas of benefits for each of them, without mentioning some of them as backward and some as more backward. The Karnataka and Kerala Governments have done it long back, and until now there are no judicial pronouncements against them. The Andhra Backward Classes Commission of 1982 proposed a division of OBCs into five groups in the place of the four groups that were recommended by the 1968 Commission.

Intra-group disparities and Caste-class nexus

Many of the Commissions appointed for the purpose ended up identifying whole castes and communities as backward classes. The question whether a caste can be coterminous with class has been discussed at length in some of the judgments of the Supreme Court. The judicial view in the well-known case of Balaji Vs the State of Karnataka may be summed up as follows. (1) The caste may be taken as a relevant circumstance in ascertaining social backwardness. (2) Though it is a relevant factor in determining social backwardness, the caste cannot be the sole or dominant test. There has been a marked shift from this position in a later case concerning admissions to Madras Medical College (writ petition no. 196 of 1967) in which the judges affirmed the view that there is nothing wrong if a whole caste is considered a backward class if the members thereof are generally backward. But it still leaves the question as to what should be done if there are considerable disparities between different segments within a caste. A relevant question raised by the judges in the Balaji case is what should be done if a large caste, though deserving to be identified as backward, going by the majority of its members, has a substantial segment which does not answer to several of the tests of backwardness. The judges answer it by observing that "if we interpret the expression *classes* as *castes*, the object of the Constitution will be frustrated".

What is being pointed out is that if a considerable proportion of a caste does not deserve to be classified as backward though the majority of the families in the caste are backward, that forward segment may be more populous than a number of small but uniformly backward castes, and may pick up all the benefits of reservations. One way to ensure that the special benefits are not monopolised by the relatively forward sections of castes classified as OBCs is to use the criterion of family income as a filtering

agent. The rationale here is that while some aspects of social backwardness are uniformly shared by all the members of a caste, a particular section of it which has adequate economic resource may be able to effectively combat and overcome conditions of educational backwardness and even a few aspects of social backwardness. The ceiling on income for eligibility to receive the special benefits earmarked for the OBCs has to be clearly above the poverty line. Only families above the poverty line can be expected to pull themselves up even under certain social handicaps. When different castes and hereditary groups are identified as belonging to OBCs, a stipulation can follow that only those amongst them with an income below a prescribed limit are eligible for special benefits. Of course this income limit has to be revised from time to time according to changes in the cost of living. Kerala is one of the states which has this rider of income limit. And in a few cases that have gone before the Supreme Court, the state's prescription of income limit has been upheld.

There may be provision for special assistance to all economically indigent families irrespective of caste or community. But it should only supplement and not substitute the special benefits prescribed for the socially and educationally backward classes.

Reserved Quota Versus Open Merit

There is yet another question which should be considered. When reservations are made for different sections of people in educational institutions or in government jobs, should those who belong to BC category but are selected in the open merit list be adjusted against their own quota? Or, should they be left in the open list, allowing the reserved quota to be filled by other candidates of backward classes in addition to the positions obtained by some of them in the open merit list?. The practice in the UPSC is to adjust all selected candidates who belong to SC and ST categories against their reserved quotas without any spill—over of candidates from the reserved category into the open list. The practice with regard to reservations in educational institutions in some States like Tamil Nadu seems to be otherwise. Candidates belonging to the backward classes are allowed to spill over into the open category to the extent they get in the general merit list. This has led to the shrinking of the seats available for the forward castes resulting in considerable heart-burning and protests and counter protests. If what is aimed at is justice for the backward sections and not recrimination against the forward sections, the recruitment of BCs may stop at the level of quotas assigned for each respective category.

The A. P. Backward Classes Commission of 1980 made a complex calculation based on an estimate that 8 per cent of the OBCs are getting into the open merit list on the average. Assessfng the OBC population at 52 per cent the commission took into consideration the average entry of 8 per cent of them into the open merit list and subtracted it from the former. Thus instead of recommending a reservation of 52 per cent of positions for the OBCs, the commission recommended 44 per cent. This is not a very commendable procedure to follow. If the percentage of OBC population is assessed at 52 per cent after a through investigation, it is better to recommend reservation commensurate with the population and preclude spill over into

the open quota. The Mandal Commission, after estimating the OBCs at 52 per cent finally recommended reservations to the extent of only 27 per cent, because of a consideration to keep the total reservations below 50 per cent. (This is after substracting 22.5 per cent reservations for SCs and STs). But if after conducting detailed surveys and censuses, it is established that all the categories of backward classes and weaker sections put together constitute more than 50 per cent of the total population, the reservations have to be correspondingly higher. On the other hand if some groups have to be deleted from the list of OBCs as a result of investigations the level of reservations has to be lowered accordingly in some of the States.

Ridiculous Confusion Between Tribes and Castes

The most urgent need of the hour is a rational reclassification of the castes and communities now included in the lists of OBCs. There is an indiscriminate lumping of some disparate groups under the category of OBCs and it needs to be immediately corrected. There is no justification for subsuming the ex-criminal tribes under the category of OBCs, but as long as they have not yet become ex-tribals, why not include them straight away in the category of STs ? Many of these communities deserve to be bracketted with the STs and not with the OBCs. So also the nomadic groups now wrongly entered as OBCs need to be reclassified. Some of the latter such as the Pambala in the Andhra Pradesh list of OBCs are satellite groups or minstrels of the SCs. As such they should be listed as SCs. Some of the groups like Nakkala and Pamula now figuring in the Andhra list of OBCs, are outside the socio-cultural mainstream of the region, and deserve to be included among the STs. As there are more concrete safeguards and benefits for the SCs and STs under our Constitution than for the OBCs, it is unjust to include in the latter any group which deserves to be included in the former. Imagine the injustice involved in equating the nomadic Narikuravas who represent the lowest socio-cultural level with some of the sub-groups of Vellalas and Mudaliyars as it happens in the Tamilnadu list of OBCs.

The very titles of the broad subgroups of the OBCs in Andhra Pradesh and Karnataka are intriguing. In the Karnataka list there is a category of Backward Tribes (besides the Scheduled Trides) within the OBCs. In Andhra Pradesh, the Muralidhara Rao Commission divides the OBCs into five broad groups and fixes their respective quotas of reservations as follows. (A) Aboriginal Tribes, Vimukta Jatis, Nomadic and Semi-Nomadic Tribes etc. 10 per cent. (B) Vocational groups 16 per cent (C) Miscellaneous professions 8 par cent (D) Other Backward Classes 8 per cent (E) Converts from SCs 2 per cent. Note the nomenclature of the first category. If there are aboridinal tribes, nomadic tribes and backward tribes they should be really more disadvantaged than the settled tribes that are included among the STs which category enjoys a greater protection under the Constitution. Then why include them in the category of OBCs and not in the category of STs ? Also noteworthy is the sub category of 'Other Backward Classes' under the broad category of the same nomenclature. What is more strange is that in the Andhra list, barbers (Mangali), washermen (Chakali), and stone cutters (Odde) are included in the first category of Aboriginal Tribes

and not in the second category of vocational groups. Similar irrational classification exists in other states also. This represents the highest limit of absurdity any administration can reach anywhere.

There is a mighty lot to be done before a rational identification and classification of the OBCs can be accomplished.

Teaching of Economics *

Why are we concerned with the orientation of teaching of economics in India and why is an organised effort being made to spell out that orientation ? Is it because, for whatever reason, Indian teaching of economics has not kept up with the latest developments in economic theory in other parts of the world and hence needs updating ? Is it because the teaching of economics in India was confined to one or some among the many theoretical systems available and hence has to be widened ? Is it because Indian economic problems are distinctly different from what obtains elsewhere and thus calls for a different kind of economic theory, or at least major adoptations of the ones that are available ?

We are not confronting these questions for the first time. They must have engaged our attention very frequently in the teaching of economics and in our researches on problems relating to the indian economy. Many of us have also written about these aspects. (One of the more recent publications on the subject is *Issues in teaching of Economics in Indian Universities* edited by M. A. Oommen — Oxford and IBH Publications, 1987 - which carries reflections on the subject by the editor himself, V. R. Pillai, Sukhamoy Chakravarty, C., T. Kurien & K. N. Raj). I shall not attempt a review of these views, but try to take the discussion a step further. For this purpose I shall make use of two instances, one rather old and the other quite recent.

Gilbert Slater who in 1916 became the first professsor in the newly founded Department of Economics of the Madras University wanted his students to approach the study of economics with the central object of understanding " the causes of and remedies for Indian poverty rather than as a series of unintelligible theories to be learnt parrot fashion from Marshall's *Principles*." There isn't any detailed account of what he taught his students, but we know that he got them to study their own villages. What was documented about those villages is available - a great deal of factual material, and certainly some insights, but Slater himself did not think that those village

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studies gave much of a clue regarding the causes of and remedies for Indian poverty. Learning Marshall's *Principles* parrot fashion, surely, would not have been more helpful, but what if *Principles* were learnt intelligently and critically ?

One of the questions relating to the orientation of economics in India arises from that. How to ensure that economic theory is taught and learnt critically and effectively ? It is related to discovering the logic of economic theory, or, more accurately the logical structure of different theoretical systems in economics - and today there are many from which to choose.

Confrontation with alternative theories immediately raises the question - which of these is relevant to India, or most suited to India. The question arises because economic theories are not merely logical structures. They emerged as responses to specific questions of specific times and climes. In other words, the logical structure of economic theories has a close bearing to the historical concrete. Thus, classical theorists—Adam Smith, Ricardo and Marx—were addressing themselves to the economic problems of the capitalist system ; the marginalists, especially general equilibrium theoriasts, were concerned with the interrelationships among different markets; Keynes dealt with some problems of a 'mature' capitalist economy and so on. There are, therefore, two components in economic theory, the historical concrete that ties it to the actual and thus limits it, and the logical version based on it which, because of the nature of logical reasoning, gives it a more general application. At times the latter comes to be seen as the "universal" aspect of economic theory. The claim of universality is valid about the procedure of reasoning, but *not* about the domain of the historical concrete to which the theory is applicable.

A second procedure to make the learning and teaching of economic theory rigorous is, therefore, to go to its basic premises, the historical concrete from which it arises and to which it is relevant. Theorists may or may not be conscious of these historial concretes; they may or may not explicitly indicate them, and yet, to the extent that economics is a *social* science, there is no escape from them. It is possible too that theorists—especially those who tend to concentrate on the logical aspects of theorising—take the historical concretes, the social setting of the theory that is, too much for granted. The social setting of economic theory includes such things as the manner in which resources are owned and controlled, the nature of the organisation of production including the system of rewards and punishments, etc. These may be thought of as the social framework or the institutional mould within which the economy functions. A theorist who has to decide what he will take for granted and what he will explicitly deal with may decide that these are "external" to his theory. Such is the nature of neoclassical theory which, therefore, lays claims to a kind of universality of its logic. But classical theorists in general, Keynes, Schumpeter and others explicitly recognised the historical concrete or the social framework of their theories. This is what gives their theories a sense of history which neoclassical theory which claims to be "universally valid", and hence "timeless" does not have.

But the attempt to axiomatise neoclassical economics, particularly Walrasian general equilibrium by Arrow,

Debreu, Koopmans et al have brought out the kind of historical concrete that it must have if it is to be considered as an attempt to conceptualise an economy and not merely as an exposition of logic.

It seems to me that the issue of the orientation of economic theory in the Indian context is related to the difference between the historical concrete of contemporary India and the historical concretes that underlie (explicitly, or more often implicitly) economic theories that are currently available to us. One reason for this difference is that practically all economic theories that we now have accept a commoditised economy as the basic premise. This is true of all "Western" theories as well as of that part of Marxist theory that deals with capitalism. A commoditised economy, of course, is a historical concrete, but so widely accepted is it in economic theory that it has become part of the *logic* of most theories, however illogical such an approach may be.

With that I turn to my second illustration of the relationship between economic theory and Indian economic reality. In 1984 J. R. Hicks, M. Mukherjee and Syamal K. Ghosh brought out *The Framework of the Indian Economy — An Introduction to Economics.* As we know, the book is an adaptation of (the fourth 1971 edition of) Hicks's *The Social Framework — An Introduction to Economics.* The book deals primarily with the National Income accounts of India and since the Indian authors of the volume are among our leading authorities on National income (as Hicks was on British National Income) it is an extremely informative and helpful book.

But what is important in the present context is the manner of adaptation. Hicks's original book, it may be recalled, started with an Introductory Chapter on Economic Facts and Economic Theory. It makes the following observation about the role of economic theory which is relevant to our discussion :

> The method of modern economic investigation is the same as the method of all science. Economics studies facts, and seeks to arrange the facts in such ways as make it possible to draw conclusions from them. As always, it is the arrangement which is the delicate operation. Facts, arranged in the right way speak for themselves ; unarranged they are as dead as mutton. One of the main things we have to learn is how to arrange our facts properly. The basic function of economic theory is to prepare the question which we want to ask of the facts. It is absolutely useless to study a mountain of facts without knowing first of all, and very precisely and clearly, what one is looking for.

The book then dealt with two kinds of facts. Part I (three chapters) examined the facts of the *productive process* and the rest of the book substantially the facts arising from the measurement of production.

What the Indian adapatation has done is to bring in the measurement of Indian production (or production of the Indian economy) in place of the measurement of the production of the British economy contained in the original volume, *without making any departure from the facts about the productive process as narrated in the original work.* Naturally, it amounts to the assumption that the facts of the Indian economy are different from the facts of the British economy only as far as the

measurement of production is concerned, but not in terms of the facts of the productive process.

To see whether it is a valid assumption we must examine how production and productive process are dealt with. According to Hicks, by production is meant "any activity directed *to the satisfaction of other people's wants* through exchange" (emphasis added) and consequently productive process is primarily exchange. Those definitions are arrived at from some prior premises which are worth examining.

> People earn their living in all sorts of different ways — by manual work, by brain-work, in factories, in offices, and on farms, in dull ways, in interesting ways — but the thing which is common to all ways of earning one's living is the doing of work for which one is paid, doing work and being paid for doing it.
>
> It appears that the whole of the economic activity of humanity (that vast complex of activities which we call the Economic System) consists of nothing else but an immense co-operation of workers or producers to make things and do things which consumers want ...... Economic life is an organization of producers to satisfy the want of consumers.

These are the premises on the basis of which production gets defined as any activity directed to the satisfaction of other people's wants and exchange emerges as the primary economic activity. Hicks made it clear also that concepts such as 'capital', 'income' and 'cost' arise from these basic ideas. The basic ideas were taken as valid not only for Britain, but for humanity as a whole. It must have been on that basis that Hicks, Mukherjee and Ghosh decided that in order to adapt the original work to India only the facts of the measurement of production need to be changed and not those of the production process.

Now, a situation in which production is organised in such a way that what is produced is to satisfy other people's wants is a historical concrete for which unversality cannot be claimed. That situation arises what Hicks himself in another of his works, *A Theory of Economic History* calls the Rise of the Exchange Economy. But, if the Exchange Economy emerged at some point in history, what existed prior to it must have been something different. In such an economy production could not have been to satisfy other people's wants, and economic activity must have been centred on something other than exchange. In fact, Hicks, apart from Marx, is one of the few economists who has helped us to understand the working of economies that existed before the Rise of the Exchange Economy. In a little aside in that work he conceded that in many 'underdeveloped' economies the pre-Exchange Economy could well be the contemporary historical concrete.

Is it factually true about India? Is there in the Indian Economy (even today) a fairly sizeable section of those who work not because they are being "paid" for it, or because they are trying to make a living by satisfying other people's wants, but because with whatever they have at their disposal they are trying to make their own living ? What does "production" mean in that context ? What is the nature of the organization of production they have ? What resources do they have to be able to use their own labour productively ? Are they completely independent ? Or do they come

under the domination of those who have greater resource power? Does that pave the way for the emergence of exchange in goods and services? How are those who acquire claims on other people's labour "not by contributing their labour to the productive process, but by allowing the use of their property" (as Hicks describes one set of people in the economy) to be characterised? Are they "producers" because they allow the use of their property in production? What of the government that buys and sells, produces and consumes, taxes and subsidies, regulates and controls?

If these are aspects of the Indian historical concrete, and the working of the economy consists of the decisions, actions and interactions of such diverse groups of people and agents, a crucial question is whether economic theories which recognise only a fully commoditised economy and reduce all economic relationships to exchange categories can be adequate to make sense of the functioning and transformation of the Indian economy. I think this is the crux of the problem of the reorientation of economic theory in the Indian context. Understanding of many of the specific problems relating to Indian agriculture, traditional industries, labour markets, the use of land and other resources, is intimately related to this issue.

What it calls for is the search for the social framework within which the economy functions. If by "the economy" we mean a *national* economy (the very recognition of which sets a boundary in terms of non-exchange and non-economic categories and thus necessitating some 'inter-disciplinary' understanding) the first step will have to be the recognition that it consists of a set of subeconomies with distinct organising principles and organisational patterns both of which get modified through the process of interaction. Patterns of labour utilization, of ownership and control over resources and the manner of surplus generation and appropriation in each type of subeconomies will have to be enquired into to understand their interactions. Exchange, of course, will be a major component of such interactions, but it will have to be set in the contexr of a more varied and more complex network of transfers and transactions not merely of the horizontal kind (which is what exchange is) but of a vertical kind also recognising that all of these undergo change through the process of interaction over time.

"The economy", after all, is the set of relationships that these variety of processses represent. It is within such a framework that the problems of valuation, quantification and aggregation and of measurement will have to be examined. The "proper blend of quantitative and qualitative economics", therefore, cannot be determined *a priori*.

A procedure of enquiry of the kind indicated above, at once conceptual and empirical, is necessary to move away from economic theory which often betrays a tendency to degenerate into mere logical exercises based on convenient but arbitrary basic premises into the discovery of the logic of economic activity within its concrete historical setting. If the purpose of economic theory is to enlighten real life, economic issues and to make sense of the working of the economy as it actually functions (and *not* to construct a logical edifice as an alternative to reality) a reorientation of this kind is called for. It is also necessary to make purposive interventions in the economy to improve the conditions of living of its members.

Project Abstracts*

Nirmal Sengupta : **Indigenous Property Relations and Development Strategies - A comparative study of water management in India, Indonesia and Philippines - Report of the project sponsored by ICSSR, Delhi and IMWOO (Netherlands) under Indo-Dutch program for Alternatives in Development.**

For a long time irrigation planning was concerned almost entirely with technical details of construction and renovation. Operations and Maintenance were its blind spots and were met almost as patch-works. This experience was not satisfactory. From the 'sixties therefore, more interest was shown in operations and maintenance tasks. Since the commencement of this new area of investigation it was noted that beneficiary farmers' participation in the irrigation systems was a very promising alternative. Within the next ten years farmers' participation became a catchword for all evils. Rarely did an irrigation development project not include this as one of its programmes. Elaborate guidelines for extension were made. New departments were added. Lots of grants were given. But the phenomenon remained illusory. Most of those reported as successful were only paper organisations. By now the euphoria has waned. But on the positive side, deeper understanding of the farmers' ways of organising themselves has been obtained. It has been established that thoughtful programmes will not go unrewarded in this area of action.

The present study is one of the many current researches being conducted all over the world and is aimed at developing such programmes. Many different approaches may be taken - and have actually been taken by different researchers - for developing such programmes. The approach of the present study has the following features :

(i) It analyses the general possibility of farmers co-operation using Game Theory framework in the context of an irrigation situation. Thereby, it brings out the necessary conditions for co-operation of various kind. The theoretical results were then compared with case studies and used to arrive at

* Abstracts of the various sponsored project recently brought out by faculty members as part of the on - going studies and research programmes of the Institute.

conclusions regarding the necessary support measures for formation and improvement of farmers' irrigation associations. In particular, the conclusion, by drawing attention to, external features conducive for successful co-operation of farmers, stresses the necessity and outlines the nature of the supporting policy that must be extended by an authority like the government, interested in promoting farmers' irrigation associations.

(ii) The Game Theory deductions draw attention to the possibility of spontaneous evolution of farmers' co-operation on an extensive scale. In this country such a statement would seem limitless exaggeration. The handful of case studies undertaken are too small a sample for verification of this hypothesis. Therefore, a second approach was adopted. Phillippines is a country where the hypothesis of ours would not be challenged. We have shown how the historical legacy can shape the differences into the systems of belief in the two countries. It may be recalled that Philippines was a Spanish colony and Spain had farmer-managed irrigation systems. It has been described how this legacy has led to a nationwide participatory programme in Philippines and how, in India, a different legacy led to complete denial of an existing feature.

(iii) Very often the researchers in this area indicate one or the other success stories as models for extension programmes. Farmers' participation is not a puppet show ; the task here is to unleash the inherent organising power of farmers, not to prune but promote their imagination, creativity and local adaptability. The only welcome policy intervention in this area is the one that can support and channelise the wide diversity in farmers' way of participation. The present study is directed towards bringing out this diversity and therefore, was conducted over a very wide area.

The study is divided into five parts : the last two consist of the conclusion and an appendix. The Game Theory model introduced in the first part contains several genre of relevant Games, with their simple, complex and iterative formulations, which describe many different irrigation organisational situations. Part two, the historical section, discusses the evolution of irrigation policy in Philippines and in zamindari and ryotwari areas of India. The case studies included in part three are from Haryana, Bihar, Andhra Pradesh and Tamilnadu in India and from north, central and south Philippines. Some are on traditional minor irrigation systems, some on modernised systems and the rest on modern canals. The theoretical model helps identification of the economic and social features relevant for analysing many different forms of co-operation of farmers. The historical section introduces the different facets of policies in different regions without which the contexts of the widely dispersed cases studied would not have been understood.

By comparing the empirical cases studied with the theoretical model the conclusions obtained indicate the form of support measures necessary for the formation and improvement of irrigation associations. Game framework indicates the basis of institutions, while the Participatory Approach — the approach currently in use in promotional programs for irrigation association-takes the basis as given. Therefore, the present set of conclusions can be used to develop policy measures which would

ensure success for participatory organising work, can indicate wider scope for participatory action and may suggest methods to community organisers for influencing association structures and equity in distribution. The policy conclusions derived in part four are, indeed, far more general than the measures currently in use.

Together, these four parts constitute the text of the report. An appendix, describing the Indonesian experience in organising beneficiaries has been organised as part five. The use of Philippine experience as the success story in the text may serve inspirational purposes for India as desired; but it may also create an impression as that the Philippines case is the model being recommended here. On the contrary, the conclusions drawn in part four indicate the scope for a far wider nature of work, many of which did not form a part of the Philippines irrigation association promotional program. The Indonesian experience has been described to establish this point and to show that there exists wide scope for imaginative work. Although the Indonesian participatory approach to water users association development program was greatly inspired by the Philippine model, by now it has already developed many other features. The inclusion of this experience shows that countries can meaningfully exchange each others experience instead of blindly immitating a successful program.

Vaidyanathan A. and S. Janakarajan: **Management of Irrigation and Its Effect on Productivity Under Different Environmental and Technical conditions: A study of two surface Irrigation Systems in Tamil Nadu, Report submitted to the Planning Commission, Government of India, Dec. 1989.**

The fact that public sector investment on surface irrigation development in India has gone up quite rapidly since the beginning of planning era is beyond doubt. The emergence of ground water as an important source of irrigation facilitates farmers' ability to control the timing and quantum of water application. Conjunctive use of ground and surface water, which also makes for better control over irrigation is known to have spread rapidly. However, it must be noted that the precise extent of this phenomenon and its implications for different segments of the ayacut remains to be properly assessed. Moreover, it is now widely recognised that institutional aspects of water management are as important in determining the effectiveness of surface irrigation system as the qulity of engineering design and other physical facilities. Systematic studies of the way surface irrigation systems are managed and the interaction among various technical, environmental and institutional factors in influencing productivity happen to be rather rare. The present study is a modest attempt at remedying this lacuna.

The scope of the study is restricted to two major surface irrigation systems in Tamil Nadu, namely, Palar Anicut System (PAS) and Parambikulam Aliyar Project (PAP). The PAS serves some 81,000 acres through 317 tanks (mostly in North Arcot district and some in Chengalpattu district). The PAS in its present form is some 100 years old, but many of the tanks have been in operation for several centuries. The PAP was commissioned barely 20 years back and serves at present some 180,000 acres in Coimbatore and Periyar districts entirely through direct canal irrigation net work. Coimbatore being a relatively low rainfall tract, the difference in productivity per unit of cultivated land

with irrigation and one without is much larger. The management of water allocations in PAP is entirely with the government right down to the ultimate outlet, while in PAS the bureaucracy controls regulation of water supplies only upto tanks, the distribution of water under each tank command being managed by the local institutional arrangements.

Given that the two systems differ significantly in almost every respect, a comparative study of their working would help in better understanding of the way irrigation systems infact work under different agro-climatic, institutional and agrarian settings, and how these various facets inter-act with each other in shaping the end result in terms of productivity. And since systems are fairly large and are marked by a great deal of internal variations, there is also an opportunity to study difference in the management of water and in productivity across various segments of each system.

Each systems has been studied at three levels :

First, the characteristics of the system and its management as a whole ; second, a macro level picture of the working of institutions and problems of water allocations with respect to selected tanks and distributaries ; and the third level inquiry is addressed to the plot / farm level.

There are considerable differences within the command area of both systems in respect of (i) topography, soil type, drainage conditions and rainfall ; (ii) quantum and duration of canal supplies and access to ground water ; (iii) the size distribution of holdings, the social composition of cultivators and the incidence of tenancy and (iv) the kinds of crops grown and the overall intensity of land use.

Our data clearly bring out the importance of the physical environment and the conditions of water supply in determining productivity. For instance, farms (segments) with saline soil and / of poor drainage facilities have relatively low level of productivity ; farms with better locational advantage generally show higher productivity and cropping intensity. However, the most striking feature of both systems is that farms (segments) with better access to subsurface water have higher cropping intensity as well as productivity than those which get only surface water. In PAS tanks, the area commanded by elevated sluices are generally at a disadvantage in terms of duration of water supplies than those served by the deepest sluices ; and the tail end tank ayacut represent a higher incidence of salinity. Similarly in PAP, the first zone of Parambikulam Main Canal seems to have a greater advantage in terms of access to canal water as well as ground water (to a large extent wells in this zone are recharged by canal water).

However, the location with reference to the source of surface supplies is not always decisive whether in the system as a whole or in particular segments of it. Topographic and soil quality variations do not necessarily bear any systematic correlation to the lay out of the canal system. The possibilities of tapping seepage losses of the system via wells depends a great deal on the permissibility of the soil, whether or not canals are lined and how well the lining is preserved and on sub-surface drainage. All these conditions exhibit marked local variations in the command area of both systems, but variations do not always re-inforce the favourable or

unfavourable conditions of surface water supply. There are many situations where apparently disadvantageous location with reference to the canal net work is compensated by favourable ground water recharge conditions and make for relatively high productivity. In both systems, as it has been mentioned earlier, access to ground water turns out to be a much more significant factor accounting for productivity differences between segments than their location.

Given that the productivity of irrigation depends on how well the timing and quantum of irrigation is regulated, the functioning of irrigation institutions should have an impact on productivity. But our study suggests that the character and functioning of institutions is partly conditioned by the characteristics of the system and that the important role of conjunctive use of ground water reduces the role of management of surface water. The latter is in any case not geared effectively to ensuring optimum use of available water. Also, a proper assessment of the effects of institutional factors on overall productivity would call for data to compare productivity in different institutional situations under broadly comparable water supply conditions. The information needed to attempt such a stratification of the various segments of the systems is not available ; nor is it easy to compile. That institution and water supply institutions are interrelated, makes the task even more difficult. What we can say however about the working of institution is that it has a direct and profound bearing on the distribution of the benefits of irrigation as between different segments and between different classes of farmers. The ability of certain farmers, and groups of them, in the canal system to manipulate water deliveries to their advantage often has adverse effects on others ; the development of well irrigation as a private sourec offers a dtstinct advantage to the larger farmers who can afford the resources needed to exploit the possibilities ; while in principle ground water markets can give smaller farmers better access to ground water, the latter are necessarily at a disadvantage in situations when available ground water is scarce relative to the need of the area seeking that water.

We are conscious that the scope of our investigation is rather wide and difficult ; and that our study has inadequacies both in terms of the questions addressed and the adequacy of information we have been able to marshall. It is also apparent that all relative aspects, are not amenable to investigation through structured questionnaries and sample surveys on which our study has relied heavily. More detailed probing using techniques of anthropological field survey would be more appropriate in understanding certain aspects, especially concerning the working of institutions, the nature of conflicts and the way they are resolved. Never the less, considering that there are hardly any studies which comprehend all the above aspects, the present, effort hopefully will help provide a fuller and more detailed understanding of the working and impact of irrigation systems.

Project Staff : *S. Sivaraja Singham, M. Vijayalakshmi, and Paul P. Appasamy* : **Management of Renewable Resources : An Action Plan for Tamil Nadu.**

An action — programme for the management of renewable resources was

prepared, following a request by the Tamil Nadu Council of Science and Technology for technical assistance. The main objective in formulating the action programme was the improvement of agricultural productivity and living conditions of small and marginal farmers who are cultivating impoverished and degraded lands. These degraded lands occur as numerous, fragmented areas of difficult access relative to the more productive, adjoining or nearby, irrigable lands and other low lands. An inter-disciplinary, long-term, action programme based on low-cost, technology inputs has been envisaged for the selected "pilot project" areas. Following programme implementation, the selected areas will be capable of activating in a catalytic manner, a sustainable and self-propagating improvement of similar lands in other parts of Tamil Nadu.

People's active participation in the identification, planning, execution, monitoring and evaluation phases as well as in operation and maintenance is crucial for ensuring a cost—efficient, sustainable programme. For practical reasons of ensuring harmony and cooperative effort among the participating people in such a complex and sensitive matter as land development, each of the "pilot project" development areas has been selected so as to be composed of a single village or a group of hamlets, since such units would be made up of a small number of nearly homogeneous groups of people.

Soil and water conservation measures including afforestation are greatly facilitated and rendered effective and sustainable by taking an integral micro-catchment as the unit for planning and development. Fortunately at the level of village as the development unit, there is a sufficiently close identity between the village lands and the catchment areas of the associated streams.

The degraded lands almost invariably form the catchment of the tributary head streams. All these lands are entirely dependent on the vagaries of the monsoon rains. They do not have any substantial area upslope to serve as a catchment or suitable sites for the construction of small tanks, not do they lie in the command areas of canals leading from large reservoirs or river weirs. On the other hand, due to improper cultivation and over-grazing, these areas contribute to the flash floods which cause extensive damage to the tanks downstream and their command areas.

The strategy of the action programme is to implement a series of integrated measures designed to promote optimum, *in situ* retention of the rainfall through improved cultivation practices, wherever practicable, and afforestation in the areas not suited for sustainable arable crop production. The harvesting of rain water and the augmenting of recharge of ground-water aquifers will improve the local availability of water for domestic use and livestock, and for crop saving irrigation during extended dry spells after the onset of the monsoon. The farm ponds could also used for seasonal fish and duck production.

Such long-term, complex land-based development work requires diligence, dedication and patience to work with small groups of people in remote villages. Voluntary or non-governmental organizations are more suitable than the conventional government agencies to persevere with the tasks of creating awareness and motivation among the small groups of people living in relatively

inaccessible areas. This effort could be supported by the local panchayat, neighbouring schools and colleges, Government administrative and technical agencies, and financial institutions.

The action programme is intended to serve as a set of ' pilot projects " for eventual replication in the whole state of Tamil Nadu. Consequently, as a first step, the wide range of social and physical characteristics prevailing in the state had to be studied and mapped using topographical, remote sensing, and socio-economic information. Besides socio-economic and land ownership patterns, physical characteristics like rainfall , topography, drainage (waterways and tanks) pattern, soils, geology, natural vegetation cover, cropping pattern and geomorphological features were taken into account in delineating broad agro-ecological zones. The more important units are : hilly areas, nearly level and gently undulating lands of different soil types, and coastal areas. Also, cutting across these three zones are ribbons and patches of canal and tank irrigation areas. Superposed on these units are five rainfall zones and, locally, prominent areas of soil degradation.

Twelve micro-catchments were selected to represent the more important and widespread agro-ecological zones which are priority areas for improving sustainable productivity and for reversing the prevailing trend of land degradation. Physical characterisation of the micro-catchments of the selected village areas was done based on field observations and using topography maps on scale 1:50,000 ; Detailed socio-economic, land use, agricultural production and livestock data were available from NGO's for two of the selected sites.

An action plan outlining the approach that the state should adopt and the methodology that should be used, is the final output of the project due to be completed by March 31, 1990.

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Sd/- A. VAIDYANATHAN
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